HRS DOCUMENTATION RECORD REVIEW COVER SHEET

Name of Site: **Devil's Swamp Lake**

Contact Persons:

Site Investigation:	EPA Region 6 Superfund Site Assessment Section (6H-MA) Brenda Nixon Cook Site Assessment Manager	(214) 665-7436
Documentation Record:	EPA Region 6 Superfund Site Assessment Section (6H-MA) Brenda Nixon Cook NPL Coordinator	(214) 665-7436

Devil's Swamp Lake is a large flood plain area which consists of Devil's Swamp, Devil's Swamp Lake, Bayou Baton Rouge and surrounding properties near Scotlandville, East Baton Rouge Parish, Louisiana, about ten miles north of Baton Rouge (Ref. 3, pp. 1-3). The swamp includes a freshwater wetland along the Mississippi River (Ref. 5, pp. 1-7). Bayou Baton Rouge is part of the swamp drainage system which drains into the Mississippi River (Ref. 14, p, 1).

Prior to the 1950s, the Devil's Lake area consisted of agricultural farms, pasture land and timber land. Numerous industrial facilities were constructed around the area in the 1960s through the 1970s. Some of the facilities have discharged to swamp since the 1960s and the 1970s (Ref. 8, pp. 2-6).

The Louisiana Department of Health and Hospitals (LDHH), in conjunction with the Louisiana Department of Environmental Quality (LDEQ), Office of Water Resources, issued a fish consumption and swimming advisory to help ensure the enjoyment of Louisiana's water resources (Ref. 21, p. 1; Ref. 23, p. 1; Ref. 25, pp. 1-2). In July 1993, the LDHH and LDEQ issued an advisory to avoid swimming, and to limit fish consumption to two meals per month for the areas of Devil's Swamp, Devil's Swamp Lake, and Bayou Baton Rouge.

The EPA completed Human Health and Ecological Risk Assessments in 1999 for this site. The human health assessment concluded that unacceptable risks to human health exists in three areas. The ecological risk assessment concluded that the sediments pose a risk to fish and crawfish in the north swamp, south swamp, and Devil's Lake.

Pathways, Components, or Threats Not Scored:

GROUND WATER PATHWAY

Ground water is the source of drinking water for Baton Rouge and northern East Baton Rouge Parish. Drinking water for the site area is mostly provided by public supply wells and a few private wells. No private drinking water wells or public supply wells have been identified within a 1-mile radius of the source (Ref. 24; Ref. 28, p. 1; Ref. 30, p. 1; Ref. 31, p. 1; Ref. 32, p. 1; Ref. 34). The Baton Rouge Water Company serves water customers within the Baton Rouge city limits. None of the Baton Rouge Water Company wells are located within a 4-mile radius of the source (Ref. 28, p. 1; Ref. 30, p. 1; Ref. 34). The Parish Water Company serves water customers in unincorporated East Baton Rouge Parish north of the City of Baton Rouge. The public supply wells that are nearest to the site are three Parish Water Company wells located from 1 to 2 miles northeast of the site, east of the intersection of Scenic Highway and Old Rafe Meyer Road. These wells are among 21 wells in the Parish Water Company system that serve about 22,100 people (Ref. 31, p. 1). The nearest wells within a 4-mile radius of the site are screened for production at depths of 1,300 to 2,400 feet (Ref. 31, p. 1).

Ground water contamination at the former Rollins facility is being addressed under an Administrative Order on Consent that became effective on May 1, 1989 (Ref. 13). Additional corrective action activities are being conducted under Rollins' Hazardous and Solid Waste Amendments (HSWA) permit (Ref. 62). This pathway would not significantly affect the site score and will not be evaluated.

SURFACE WATER PATHWAY

The overland/flood migration component of the surface water pathway was evaluated for this HRS package. The ground water to surface water migration component was not evaluated, because the overland/flood migration component resulted in a higher pathway score.

Also, the drinking water threat for the overland/flood migration component was not evaluated, because surface water is not used as a drinking water source in the Baton Rouge area (Ref. 29, p. 1; Ref. 33, p. 1). The surface water pathway score was maximized by scoring the human food-chain and environmental threats, because fisheries and wetland targets were identified within the 15-mile target distance limit.

SOIL EXPOSURE PATHWAY

The soil exposure pathway was not evaluated, because no on-site residents or nearby individuals were identified within a 1-mile radius of the site (Ref. 35, p. 1). Therefore, the soil exposure pathway was not evaluated because it would not significantly affect the site score.

AIR PATHWAY

No observed release to air has been documented at the site. Additionally, 1980 population data show that no humans reside within a 1-mile radius of the source (Ref. 35, p.1). Therefore, the air migration pathway was not evaluated, because it would not significantly affect the site score.

HRS DOCUMENTATION RECORD

Name of Site:	Devil's Swamp Lake
EPA Region:	6
Date Prepared:	August 20, 2002
Street Address of Site:	Section 44 and 45, Township 5 South, Range 1 West, Scotlandville, additional areas on Sections 83, 85, 28, 29, 31, 32, 33, 34, 47, 51, and Sections 4, 5, 8, 9, 16, 17, 55, and 59, Township 6 South, Range 1 West, Scotlandville, excluding releases attributable to the Petro Processors NPL site and areas to which these releases have migrated.
County and State:	East Baton Rouge Parish, Louisiana
General Location in the State:	The Devil's Swamp Lake site is located in an undeveloped backwater swamp on the east bank of the Mississippi River, north of Baton Rouge, Louisiana. The site is generally bordered by the northern portions of Bayou Baton Rouge to the north, U.S. Highway 61 - (Scenic Highway), the Ewell farm, Clean Harbors Baton Rouge, LLC [a.k.a. Safety Kleen, Inc., a.k.a Laidlaw Environmental Services, Inc., a.k.a. Rollins Environmental Services (LA), Inc.], and the Baton Rouge barge harbor to the east, and the Mississippi River to the south and west. The Devil's Swamp Lake site specifically excludes any releases from the existing Petro Processors of Louisiana, Inc. (Petro) National Priorities List (NPL) site (LAD057482713) located in the Devil's Lake watershed. The releases from the Petro site are being remediated pursuant to a Consent Decree entered in the U.S. District Court for the Middle District of Louisiana on February 16, 1984 (Ref. 60). The Petro Processors NPL site consists of two disposal areas known as the Brooklawn and Scenic Highway sites. The Brooklawn site is located at the north end of Devil's Swamp, and the Scenic Highway site is located between Bayou Baton Rouge and U.S. Highway 61 (Scenic Highway)(Attachment A to this documentation record, Figure A-2). The Brooklawn and Scenic Highway sites received waste from a number of industries from 1961 through 1980. Hexachlorobenzene (HCB), hexachlorobutadiene (HCBD), chlorinated hydrocarbons, polycyclic aromatic hydrocarbons, heavy metals, and oils contaminate the ground water, surface water, and soil at the two sites.

The Devil's Swamp Lake site does not include the Brooklawn and Scenic Highway sites and the areas to which Petro characteristic wastes (for example, waste containing HCB and HCBD) have migrated from the Brooklawn and Scenic Highway sites. Based on current information, collected during the Devil's Swamp, Devil's Swamp Lake and Bayou Baton Rouge pre-remedial investigations, these areas may extend as far as sample location DS-SS-33 downstream from the Brooklawn site, sample BBR-SS-21 downstream from the Scenic Highway Site, and sample BBR-SS-13 upstream of the Scenic Highway site. Attachment F to this documentation record identifies the location of those areas presently considered and excluded based on available information at the time of proposal. Definition of these areas may change during the RI/FS and/or later remedial actions as the extent of contamination originating from the Petro site becomes better defined (Ref. 64, Section 2.1, p. 9).

Topographic Maps: Scotlandville, Louisiana
Baton Rouge West, Louisiana
Plaquemine, Louisiana

Latitude: 30/33'43"
Longitude: 91/13'14"

Note: The coordinates provided above correspond to the location of the Probable Point of Entry (PPE) of effluent from the former Rollins facility into Devil's Swamp Lake.

Scores

Air Pathway	=	NS
Groundwater Pathway	=	NS
Soil Exposure Pathway	=	NS
Surface Water Pathway	=	100
HRS SITE SCORE	=	50

(NS = Not Scored)

WORKSHEET FOR COMPUTING HRS SITE SCORE

		S	S^2
1.	Ground Water Migration Pathway Score (S_{gw})	NS	
2a.	Surface Water Overland/Flood Migration Component (from Table 4-1, line 30)	100	
2b.	Ground Water to Surface Water Migration Component	NS	
2c.	Surface Water Migration Pathway Score (S_{sw}) Enter the larger of lines 2a and 2b as the pathway score.	100	10,000
3.	Soil Exposure Pathway Score (S_s)	NS	
4.	Air Migration Pathway Score (S_a)	NS	
5.	Total of $S_{gw}^2 + S_{sw}^2 + S_s^2 + S_a^2$		10,000
6.	**HRS Site Score** Divide the value on line 5 by 4, and take the square root	50	

Note: NS = Not Scored

TABLE 4-1

SURFACE WATER PATHWAY
SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET
Page 1 of 3

Factor Categories and Factors		Maximum Value	Value Assigned
DRINKING WATER THREAT		NOT SCORED	
Likelihood of Release			
1.	Observed Release	550	550
2.	Potential to Release by Overland Flow:		
2a.	Containment	10	
2b.	Runoff	25	
2c.	Distance to Surface Water	25	
2d.	Potential to Release by Overland Flow [lines 2a x (2b + 2c)]	500	
3.	Potential to Release by Flood:		
3a.	Containment (Flood)	10	
3b.	Flood Frequency	50	
3c.	Potential to Release by Flood (lines 3a x 3b)	500	
4.	Potential to Release (lines 2d + 3c, subject to maximum of 500)	500	
5.	Likelihood of Release (higher of lines 1 and 4)	550	550
Waste Characteristics			
6.	Toxicity/Persistence	[a]	
7.	Hazardous Waste Quantity	[a]	
8.	Waste Characteristics	100	
Targets			
9.	Nearest Intake	50	
10.	Population:		
10a.	Level I Concentrations	[b]	
10b.	Level II Concentrations	[b]	
10c.	Potential Contamination	[b]	
10d.	Population (lines 10a + 10b + 10c)	[b]	
11.	Resources	5	
12.	Targets (lines 9 + 10d + 11)	[b]	

TABLE 4-1

SURFACE WATER PATHWAY
SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET
Page 2 of 3

Factor Categories and Factors		Maximum Value	Value Assigned
Drinking Water Threat Score:			
13.	Drinking Water Threat Score [(lines 5 x 8 x 12)/82,500 subject to a maximum of 100]	**NOT SCORED VALUE OF 0 ASSIGNED**	0
HUMAN FOOD-CHAIN THREAT			
Likelihood of Release			
14.	Likelihood of Release (same value as line 5)	550	550
Waste Characteristics			
15.	Toxicity/Persistence/Bioaccumulation	[a]	5×10^8
16.	Hazardous Waste Quantity	[a]	100
17.	Waste Characteristics	1,000	320
Targets			
18.	Food-Chain Individual	50	45
19.	Population:		
19a.	Level I Concentrations	[b]	0
19b.	Level II Concentrations	[b]	0.03
19c.	Potential Contamination	[b]	0
19d.	Population (lines 19a + 19b + 19c)	[b]	0.03
20.	Targets (lines 18 + 19d)	[b]	45.03
Human Food-Chain Threat Score			
21.	Human Food-Chain Threat Score [(lines 14 x 17 x 20)/82,500 subject to a maximum of 100]	100	96.064

TABLE 4-1

SURFACE WATER PATHWAY
SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET
Page 3 of 3

Factor Categories and Factors		Maximum Value	Value Assigned
ENVIRONMENTAL THREAT			
Likelihood of Release			
22.	Likelihood of Release (same value as line 5)	550	550
Waste Characteristics			
23.	Ecosystem Toxicity/Persistence/Bioaccumulation	[a]	5×10^8
24.	Hazardous Waste Quantity	[a]	100
25.	Waste Characteristics	1,000	320
Targets			
26.	Sensitive Environments:		
26a.	Level I Concentrations	[b]	0
26b.	Level II Concentrations	[b]	75
26c.	Potential Contamination	[b]	0
26d.	Sensitive Environments (lines 26a + 26b + 26c)	[b]	75
27.	Targets (value from line 26d)	[b]	
150			
Environmental Threat Score			
28.	Environmental Threat Score [(lines 22 x 25 x 27)/82,500 subject to a maximum of 60]	60	60
29.	Watershed Score[c] (lines 13 + 21 + 28, subject to a maximum of 100)	100	100
30.	Pathway Score (S_{sw}), (highest score from line 29 for all watersheds, subject to a maximum of 100)	100	100

Notes: This table summarizes scoring factors that were determined for the site and presented in Section 4.0 of this documentation record.

[a] Maximum value applies to waste characteristics category.
[b] Maximum value is not applicable.

REFERENCES

REFERENCE NUMBER	DESCRIPTION
1	U.S. Environmental Protection Agency (EPA). 1990. Title 40, Code of Federal Regulations (40 CFR) Part 300, Appendix A. Hazard Ranking System (HRS); Final Rule. December 14.
2	U.S. EPA. 2004. Superfund Chemical Data Matrix (SCDM), January.
3	U.S. Geological Survey (USGS). 7.5-Minute Topographic Maps (three pages): Scotlandville, Louisiana. 1992. Tracking number 03 001. Baton Rouge West, Louisiana. 1992. Tracking number 03 002. Plaquemine, Louisiana. 1992. Tracking number 03 003. (Location of PPE, definition of in-water segment and end of Target Distance Limit (TDL) added by EPA contractor PRC Environmental Management, Inc. (PRC).
4	USGS. 15-Minute Topographic Map. Zachary, Louisiana. 1963. One page. (Location of the site on south west corner of the map (Devils Swamp).
5	U.S. Fish and Wildlife Service. National Wetlands Inventory Maps (7 pages): Baton Rouge West, Louisiana. 1992. Zachary, Louisiana. (Date Unknown).
6	PRC Environmental Management, Inc. (PRC) 1993. Expanded Site Inspection (ESI) For Devil's Swamp Lake, East Baton Rouge Parish, Louisiana. October 21. 538 pages.
7	PRC. 1993. ESI of Devil's Swamp, East Baton Rouge Parish, Louisiana. October 20. 742 pages.
8	PRC. 1993. Site Inspection For Bayou Baton Rouge, Scotlandville, East Baton Rouge Parish, Louisiana. September 27. 315 pages.
9	U.S. EPA. 1990. Authorization to Discharge Under the National Pollutant Discharge Elimination System (NPDES). Permit No. LA0038245. September 28. 11 pages.
10	Environmental Control Technology Corporation (ENCOTEC). 1992. Final Resource Conservation and Recovery Act (RCRA) Facility Investigation Report at Rollins Environmental Services (LA), Inc. Selected portions of the document. September 24. 180 pages.
11	Rollins Environmental Services (LA) , Inc. 1993. Letter regarding NPDES Outfall Pipeline Construction. From Michael F. De Carlo, President, to Hazel Shofner, U.S. EPA Region 6 Water Enforcement Branch. June 3. One page.
12	ENCOTEC. 1993. 1992 Sediment Sampling Report, Rollins Environmental Services (LA), Inc. September 23. 128 pages.
13	U.S. EPA. 1991. Administrative Order on Consent. U.S. EPA Docket Number VI-004(h)-88-H. May 1. 10 pages.

REFERENCE NUMBER	DESCRIPTION
14	Louisiana Department of National Resources (LDNR), Office of Environmental Affairs, Water Pollution Control Division (WPCD). 1980. Internal Memorandum regarding Devil's Swamp. From Kirk Cormier and Stanley Howes, III. To J. Dale Givens, Administrator. June 23. Eight pages.
15	Louisiana Department of Environmental Quality (LDEQ). 1985. Internal Memorandum Regarding Presence of Polychlorinated Biphenyls (PCB) in Devil's Swamp Lake. From John P. Wong, Ph.D., Organics Analysis Laboratory. To Michael H. Schurtz, Program Manager. October 14. One page.
16	LDEQ Office of Water Resources (OWR). 1986. Internal Memorandum Regarding Rollins Environmental Services (LA), Inc. and Devil's Swamp Lake. From Michael H. Schurtz. To Patricia L. Norton, Secretary, and J. Dale Givens, Assistant Secretary. July 18. Nine pages.
17	LDEQ OWR. 1987. Internal Memorandum Regarding continuing assessment of the occurrence of PCBs in Devil's Swamp Lake. From Michael H. Schurtz. To J. Givens. March 13. Four pages.
18	LDEQ OWR. 1987. Internal Memorandum Regarding Update on Chemical Contamination in Fishes, Devil's Swamp Lake. From Michael H. Schurtz. To J. Dale Givens. June 19. Three pages.
19	LDEQ OWR. 1987. Internal Memorandum Regarding Fish Consumption Advisory - Devil's Swamp Lake. From Michael Schurtz. To J. Dale Givens. October 16. One page.
20	LDEQ OWR. 1987. Internal Memorandum Regarding Devil's Swamp Lake, East Baton Rouge Parish. From Michael H. Schurtz. To J. Dale Givens and Robert P. Hannah. October 27. Two pages.
21	LDEQ. 1987. Press Release Regarding LDEQ Posting of Devil's Swamp Lake. October 29. One page.
22	Aero Data Corporation. 1992. Aerial Photograph of the Devil's Swamp Lake Area. Photograph No. ADC-92024-0762. April 24. One page.
23	Louisiana Department of Health and Human Resources (LDHHR). 1987. Letter Regarding Health Hazards at Devil's Swamp Lake. From Sandra L. Robinson, M.D., MPH, Secretary and State Health Officer. To Martha Madden, Secretary, LDEQ. June 22. One page.
24	Louisiana Department of Transportation and Development (DOTD). 1993. Water Well Registration Report. Prepared for PRC. May 3. 26 pages.
25	U.S. EPA. 1993. Letter regarding Commercial Fishing in Bayou Baton Rouge, Devil's Swamp, and Devil's Swamp Lake. From Cynthia J. Kaleri, Remedial Project Manager. To Mary Snyder, U.S. Food and Drug Administration. May 3. Two pages.
26	PRC. 1993. Memorandum. Excerpts from the Devil's Swamp Lake ESI Field Logbook. From Paul Dubois, Environmental Engineer. To file. November 10. Two pages.
27	PRC 1994. Memorandum. Excerpts from the Devil's Swamp ESI Field Logbook. From Paul Dubois, Environmental Engineer. To file. December 12. Two pages.

REFERENCE NUMBER	DESCRIPTION
28	ICF Technology, Inc. (ICF). 1992. Record of Telephone Conversation regarding Baton Rouge Water System. Between Jeffrey E. Patterson, and Karen Dibenedetto, Engineering Department, Baton Rouge Water Company. February 11. One page.
29	ICF. 1989. Record of Telephone Conversation regarding City of Baton Rouge Water Supply. Between Jeffrey E. Patterson, Field Investigation Team (FIT) Chemist, and Cathy LeBlanc, Baton Rouge Water Company. May 3. One page.
30	ICF. 1989. Record of Telephone Conversation regarding City of Baton Rouge Water Supply. Between Jeffrey E. Patterson, FIT Chemist, and Cathy LeBlanc, Engineering Department, Baton Rouge Water Department. April 26. One page.
31	ICF. 1992. Record of Telephone Conversation regarding City Parish Water Company Wells. Between Jeffrey E. Patterson, and Mr. Mitchell and Liz Hudson, Parish Water Company. February 11. One page.
32	ICF. 1992. Record of Telephone Conversation regarding City of Baker Water Wells. Between Jeffrey E. Patterson, and Leroy White, Assistant Superintendent, City of Baker Water Utilities. February 11. One page.
33	ICF. 1986. Record of Telephone Conversation regarding Population Served by Surface Water. Between Bernard Cousin, FIT Chemist, and Ken Naquine, Assistant Superintendent, Baton Rouge Water Company. April 25. One page.
34	Capital Area Ground Water Conservation Commission, Baton Rouge, LA. 1989. Groundwater Production Rates for the First Quarter. 12 pages.
35	U.S. EPA. 1980. Graphical Exposure Modeling System (GEMS) Database. Compiled from U.S. Census Bureau 1980 Data. One page.
36	Grant Chemical Division of Ferro Corporation (Grant Chemical). 1986. Generator Biennial Hazardous Waste Report for 1985. March 13. Five pages.
37	Lewis, Kenneth. 1974. Letter Regarding Flagrant Pollution Activities At Grant Chemical. To Arthur W. Busch, Regional Administrator, U.S. EPA Region 6. October 24. Three pages.
38	LDNR. 1982. Water Discharge Permit for Grant Chemical Division of Ferro Corporation. Permit No. WP0063, LA0004057. June 4. 16 pages.
39	Grant Chemical. 1987. Letter Regarding Reclassification Of Grant Chemical To "Generator Only." From Richard Boudreau, Manager. To Glenn Miller, Administrator, Office of Solid and Hazardous Waste. August 17. One page.
40	Grant Chemical. 1985. Letter Regarding Closure Certification Of Hazardous Waste Impoundments. From Richard Boudreau. To Glenn Miller, Administrator, Office of Solid and Hazardous Waste. November 8. One page.
41	Bieker Engineering. 1985. Letter Regarding Closure Permit for Grant Chemical. From Jon Bieker, P.E. To George Kramer, Assistant Secretary, LDEQ. November 7. One page.
42	LDEQ. 1986. Letter Regarding Acceptance Of Closure Certification. From Glenn A. Miller, Administrator. To Richard Boudreau, Grant Chemical. February 6. One page.
43	LDEQ. 1988. Letter Regarding Revised Part I Hazardous Waste Permit Applications. From John Koury, Assistant Secretary. To Carl Bolden, U.S. EPA Region 6. January 20. Two pages.

REFERENCE NUMBER	DESCRIPTION
44	U.S. EPA. 1978. Authorization to Discharge Under the National Pollutant Discharge Elimination System (NPDES) for Grant Chemical. Permit No. LA0004057. March 20. 13 pages.
45	LDNR. 1983. Water Discharge Permit for Grant Chemical. Permit No. WP0325, LA0004057. January 17. 21 pages.
46	Louisiana Stream Control Commission, Baton Rouge, LA. 1975. Notice of Determination. To Grant Chemical. February 25. Two pages.
47	Louisiana Wild Life and Fisheries Commission. 1975. Internal Memorandum Regarding material that was spilled in 1975 by Grant Chemical. To. R. A. Lafleur, Chief. From M. B. Watson, Biologist. February 20. Three pages.
48	Grant Chemical. 1975. Letter Regarding Lagoon Sampling. To Jim Coerver, Louisiana State Department of Health. From Hugh Gainey. June 12. Nine pages.
49	Grant Chemical. 1985. Letter Regarding Unpermitted Accidental Discharge To Bayou Baton Rouge, June 1985. To Glenn Miller, Administrator, LDEQ. From Richard Boudreau, Plant Engineer. June 28. Four pages.
50	Woodward-Clyde Consultants. 1992. Revised (April 9, 1992) Waste Analysis Plan for Schuylkill Metals Corporation (Schuylkill), Baton Rouge, LA. April 9. 17 pages.
51	LDEQ. 1993. Hazardous Waste Treatment, Storage, and Disposal (TSD) Facility Operating Permit for Schuylkill Metals Corporation, LAD008184137-OP-1. September 30. 24 pages.
52	U.S. EPA. 1989. Authorization to Discharge Under NPDES for Schuylkill Metals Corporation. Permit No. LA0004464. September 29. 14 pages.
53	U.S. EPA. 1978. Authorization to Discharge Under NPDES for Reynolds Metals Company. Permit No. LA0000183. May 24. Nine pages.
54	Patterson Schafer, Inc. 1989. Unified Plan, Revised, for Union Tank Car Company, Baton Rouge, LA. January 26. 13 pages.
55	LDNR. 1981. Interim Inspection Report for Union Tank Car Co., Baton Rouge, LA, follow-up on spill incident of 4-1-81. April 6. Two pages.
56	LDNR. 1981. Interim Inspection Report for Union Tank Car Co., Baton Rouge, LA, spill incident of 4-1-81. April 2. One page.
57	LDNR. 1981. Interim Inspection Report for Union Tank Car Co., Baton Rouge, LA, samples collected by LDNR. April 2. Four pages.
58	LDNR. 1981. Internal Memorandum Regarding Union Tank Car Co. To File. From L. Maurice Lasserre. June 29. Four pages.
59	U.S. EPA. 1975. Authorization to Discharge Under NPDES for Union Tank Car Company. Permit No. LA0003506, effective September 28, 1975. June 24. 10 pages.
60	U.S. EPA. 1994. Petro Processors, Inc., Superfund Site Update. June 8. Six Pages.

REFERENCE NUMBER	DESCRIPTION
61	PRC. 1993. Letter Regarding Commercial Crawfish/Fish Harvesting from Devil's Swamp and Devil's Swamp Lake. From Jeffrey T. Ayers, Contractor Project Manager. To Cynthia Kaleri, U.S. EPA Region 6, Superfund Enforcement Branch. April 30. One page.
62	U.S. EPA. 1991. Hazardous Waste Permit (Hazardous and Solid Waste Amendments, 1984). Rollins Environmental Services, Inc., LAD010395127. Signed March 13. Effective April 15. 34 pages.
63	U.S. EPA. 1996. Using Qualified Data to Document an Observed Release and Observed Contamination. EPA/540/F-94/028. November. 18 pages.
64	U.S. EPA. 1992. Hazard Ranking System Guidance Manual, Interim Final. EPA/540/R-92/026, OSWER Directive 9345.1-07. Excerpts, Chapter 2, Policy and Statutory Issues. 44 pages.
65	Letter with attachment. To: Kristine Lloyd, Ecology & Environment, Inc. From: Jerry Daigle, Louisiana State Soil Scientist. East Baton Rouge Parish soils information. Date: August 1, 2002. 9 pages.

ATTACHMENTS

A Site Location Map and Watershed Facilities Map. 2 pages (Ref. 4; Ref. 22).

B Rollins Outfall Ditch Location Map. 1 page (Ref. 10; Ref. 22).

C Analytical Data Usability Summary. 9 pages (Ref. 6; Ref. 7).

D Sampling Location Maps. 5 pages (Ref. 3; Ref. 6; Ref. 7; Ref. 22).

E Environmental Threat Wetlands Targets Map. 2 pages (Ref. 5; Ref. 7).

F Site Location Map and Sampling Location Map showing location of the Petro NPL site and areas excluded from the Devil's Swamp Lakesite based on available information.

These attachments were modified from the references cited in parentheses, and appended to this document record for the convenience of the reader.

NOTES TO THE READER

Tracking numbers are assigned by U.S. EPA Region 6 to every page of every reference. The tracking numbers consist of the reference number followed by a consecutive page number associated with that reference. For example, 06 001 and 06 002 represent Reference 6, pages 1 and 2.

The following rules were used when citing references in the HRS documentation record:

1. Original page numbers are cited where they are present.

2. Designated tracking numbers are cited when page numbers are absent.

3. References with incomplete pagination require the use of designated tracking numbers for pages lacking a page number; original page numbers are cited whenever present.

4. Analytical data are referenced by tracking numbers only.

5. Maps, figures, and sketches are also stamped with tracking numbers to identify their location within the reference file.

6. The Devil's Swamp Lake site includes Devil's Lake and Bayou Baton Rouge.

7. The former Rollins Facility is now owned and operated by Clean Harbors Baton Rouge, LLC.

Abbreviations/conventions used to identify references and citations:

C	Reference	Ref.
C	Section	Sec.
C	Single Page	p.
C	Multiple Pages	pp.
C	";"	Next reference.
C	( )	Selected acronyms.

Where multiple references are used in support of a statement, some selected acronyms are added to the citation as an aid to the reader in identifying the key supporting documents. Some examples are; Preliminary Assessment (PA) report, Screening Site Inspection (SSI), Listing Site Inspection (LSI), topographic maps (USGS Topographic Map), (Sample Location Map), (Aerial Photograph), etc.

SOURCE DESCRIPTION

2.2 SOURCE CHARACTERIZATION

Number of the source: 1
Name and description of the source: Rollins Outfall Ditch (Source Type: Contaminated Sediments)

Rollins Environmental Services (LA), Inc. (Rollins) operated a Resource Conservation and Recovery Act (RCRA) commercial hazardous waste disposal facility (LAD010395127) that began receiving waste in 1971 (Ref. 10, p. v (Executive Summary); Ref. 62, p. 1, U.S.EPA Hazardous Waste Permit). A site location map is presented in Attachment A to this documentation record, Figure A-1.

Noncombustible and nonrecoverable wastes were incinerated, stabilized, and/or landfilled at the site (Ref. 10, p. v). The former Rollins facility discharged wastewater through two National Pollutant Discharge Elimination System (NPDES) permitted outfalls into the Rollins outfall ditch. Treated process wastewater, sanitary sewage, and storm water were discharged through outfall 001 (Ref. 9, pp. 1, 3, and 5 of Part I). The facility discharged uncontaminated rainwater runoff from outside of the process areas through outfall 002 (Ref. 9, p. 7 of Part I).

Rollins discharged from outfalls 001 and 002 under the NPDES Permit No. LA0038245, which was issued on September 28, 1990. The permit limits the maximum and average concentrations of specific hazardous substances in the effluent. The NPDES permit also authorized Rollins to route outfall 001 directly to the Mississippi River upon completion of a pipeline through Devil's Swamp (Ref. 9, cover page). On June 3, 1993, Rollins terminated outfall 001 effluent discharge into the outfall ditch and began discharging through outfall 001, via pipeline, directly to the Mississippi River, bypassing the Rollins outfall ditch (Ref. 11, p.1).

The Rollins outfall ditch begins near the southwest corner of the Rollins process area and ends at Devil's Swamp Lake. The Rollins outfall ditch is about 3,600 feet long (Attachment B to this documentation record, Figure B-1). At the outfalls, the elevation of the ditch is about 75 feet above the National Geodetic Vertical Datum (NGVD); at Devil's Swamp Lake the ditch elevation is about 30 feet above the NGVD (Ref. 3). The upper part of the outfall ditch near the outfalls on the Rollins facility is a man-made feature. The ditch crosses underneath the Kansas City Southern railroad tracks southwest of the Rollins plant, along a natural drainage to Devil's Swamp Lake (Attachment B).

In October 1993, an Expanded Site Inspection (ESI) of Devil's Swamp Lake was conducted by an EPA Region 6 contractor, to evaluate contamination in the lake. Two sediment samples FY334 (DSL-SS-24) and FY335 (DSL-SS-25) were collected from the former Rollins outfall ditch during the ESI of Devil's Swamp Lake (Attachment B to this documentation record). These samples contained total Polychlorinated Biphenyls (PCBs) concentrations ranging from 140 to 820 micrograms per kilogram (µg/kg), or parts per billion (ppb). Sample FY334 was located in the former Rollins outfall ditch about 400 feet upstream of Devil's Swamp Lake, and

sample FY335 was collected from the outfall ditch about 200 feet upstream of Devil's Swamp Lake (Ref. 6, p. 11, Table 1 (Sample Description), p. 27, Table 2 (Organic Contaminants in Sediments of Devil's Swamp Lake), p. 13, Figure 2 (Sample Location Map)). The usability of the ESI sample data is discussed in Attachment C to this documentation record.

The contaminated sediments in the Rollins outfall ditch will be evaluated as a source type "other" for HRS purposes.

Location of the source, with reference to a map of the site:

The Rollins outfall ditch is located near the southwest corner of the process area at the former Rollins facility. The outfall ditch drains to the west and south to Devil's Swamp Lake (Ref. 3 (USGS Topographic Maps); Ref. 10 (Rollins RCRA Facility Investigation (RFI) Report), Figure 4.3-1 (NPDES Permitted Outfall Effluent Channel, Sediment Sampling Locations); and Attachment B to this documentation record).

Containment:

Gas release to air: Air Pathway Not Scored

Particulate release to air: Air Pathway Not Scored

Release to groundwater: Groundwater Pathway Not Scored

Release via overland migration and/or flood:

The hazardous substance migration path includes both the overland and the in-water segments that hazardous substances would follow as they migrate away from the source. The source is the outfall ditch that received treated process wastewater and storm water from the former Rollins facility (Ref. 9, cover page). No maintained engineered cover or functioning and maintained run-on control system or run-off management system has been identified or documented for the source (Ref. 3; Ref. 14, p. 1; Ref. 16, p. 1). Based on Table 4-2 of 40 CFR 300 (Ref. 1, Table 4-2), a containment factor value of 10 is assigned to the source.

Sediment samples from Devil's Swamp Lake at and downstream of the Probable Point of Entry (PPE) indicate the presence of PCBs in Source 1. An observed release of PCBs to the surface water migration pathway has been documented in Devil's Swamp Lake, the southern parts of Devil's Swamp and southern Bayou Baton Rouge (Ref. 6, pp. 14 and 38, Table 1 (Sample Description), Table 2, and p. 13, Figure 2 (Sample Location Map); Ref. 7, pp. 23 and 43, Table 1 (Sample Description), Tables 6, 10 and 12, and p. 11, Figure 2 (Sample Location Map)). Copies of the Sample Location Maps are appended to this documentation record, Attachment D, for the convenience of the reader.

2.4.1 Hazardous Substances

Rollins has disposed of PCBs and other hazardous substances in several waste management units at the facility (Ref. 10, Tables 3.3-5 and 3.5-1). Process wastewater streams were generated during treatment, storage, and disposal of organic and inorganic wastes handled by Rollins (Ref. 10, p. v). Treated process wastewater, sanitary sewage, and storm water are discharged through outfall 001, and uncontaminated rain water runoff is discharged through outfall 002 (Ref 9, pp. 1 and 7 of Part I). Rollins' NPDES permit places discharge limitations on hazardous substances that may be present in the effluent (Ref. 9, cover page).

In January 1991 and December 1992, Rollins investigated the outfall ditch, collecting sediment samples along transects at 5 meters (16.5 feet) upstream of the 001 Outfall (-5-meter transect), and 10-, 50-, 100-, 150-, 200-, and 250-meters transect (825 feet) downstream of the outfall (10-, 50-, 100-, 150-, 200-, and 250-meter transects). Rollins reported that these samples contained PCB isomers Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260, and other hazardous substances. Total PCB concentrations in Rollins' sediment samples were as high as 105 ppm at the 50-meter transect (Ref. 10, pp. 4.3-5 through 4.3-8, and Tables 4.3-3a and 4.3-3b).

Two sediment samples were collected from the Rollins outfall ditch during the October 1993 Devil's Swamp Lake ESI. These samples FY334 (DSL-SS-24) and FY335 (DSL-SS-25) showed the presence of Aroclor-1254. The total PCB concentrations in these samples ranged from 140 Fg/kg in FY334 to 820 Fg/kg in FY335 (Ref. 6, Table 1 (Sample Description), p. 27, Table 2 (Organic Contaminants in Sediments of Devil's Swamp Lake), and p. 13, Figure 2 (Sample Location Map).

HAZARDOUS SUBSTANCES DETECTED IN THE ROLLINS OUTFALL DITCH		
Hazardous Substance	**Evidence (Sample)**	**Reference**
Aroclor-1242	100-, 150-, 200-, and 250- meter transects	Ref. 12, Table 1
Aroclor-1248	-5-, 10-, and 50- meter transects	Ref. 10, Table 4.3-3a
Aroclor-1254	FY334 (DSL-SS-24) , FY335 (DSL-SS-25) -5-, 10-, 50-, 100-, 150-, 200-, and 250- meter transects	Attachment C to this documentation record (Analytical Data Usability Summary); Ref. 6, Tables 1 and 2, and Figure 2; Ref. 10, Table 4.3-3a; Ref. 12, Table 1
Aroclor-1260	-5-, 10-, and 50- meter transects	Ref. 10, Table 4.3-3a

OBSERVED CONTAMINATION -ROLLINS OUTFALL SAMPLE DATA				
Sample (depth in/cm)	**Hazardous Substance**	**Concentration (µg/kg)**	**Detection Limit/SQL (µg/kg)**	**Reference**
100M (0-6 in)	Aroclor-1242 Aroclor-1254	ND 10,000 S	1,600 1,600	Ref. 12, Appendix A, pp. 28, 95
100M (6-12 in)	Aroclor-1242 Aroclor-1254	ND 4,100 S	800 800	Ref. 12, Appendix A, pp. 28, 96
150M (0-6 in)	Aroclor-1242 Aroclor-1254	17,000 S 78,000 S	8,000 8,000	Ref. 12, Appendix A, pp. 28, 97
150M (6-12 in)	Aroclor-1242 Aroclor-1254	8,800 S 31,000 S	3,200 3,200	Ref. 12, Appendix A, pp. 28, 98
200M (0-6 in)	Aroclor-1242 Aroclor-1254	2,900 S 14,000 S	1,600 1,600	Ref. 12, Appendix A, pp. 28, 99
200M (6-12 in)	Aroclor-1242 Aroclor-1254	ND 600 S	80 80	Ref. 12, Appendix A, pp. 28, 100
250M (0-6 in)	Aroclor-1242 Aroclor-1254	ND 26,000 S	800 4,000	Ref. 12, Appendix A, pp. 28, 101
250M (6-12 in)	Aroclor-1242 Aroclor-1254	ND 1,500 S	80 160	Ref. 12, Appendix A, pp. 28, 102

OBSERVED CONTAMINATION -ROLLINS OUTFALL SAMPLE DATA				
Sample (depth in/cm)	**Hazardous Substance**	**Concentration (µg/kg)**	**Detection Limit/SQL (µg/kg)**	**Reference**
5M (0 cm)	Aroclor-1248 Aroclor-1254 Aroclor-1260	15,000 34,000 4,300	800 1,600 1,600	Ref. 10, Appendix 4.3 C, pp. 39-41, 51
5M (5 cm)	Aroclor-1248 Aroclor-1254 Aroclor-1260	27,000 33,000 8,200	800 1,600 1,600	Ref. 10, Appendix 4.3 C, pp. 39-41, 66
5M (25 cm)	Aroclor-1248 Aroclor-1254 Aroclor-1260	24,000 26,000 5,500	800 1,600 1,600	Ref. 10, Appendix 4.3 C, pp. 39-41, 81
10M (0 cm)	Aroclor-1248 Aroclor-1254 Aroclor-1260	9,300 16,000 1,400	320 640 640	Ref. 10, Appendix 4.3 C, pp. 39-41, 97
10M (5 cm)	Aroclor-1248 Aroclor-1254 Aroclor-1260	9,100 23,000 2,400	400 800 800	Ref. 10, Appendix 4.3 C, pp. 39-41, 112
10M (25 cm)	Aroclor-1248 Aroclor-1254 Aroclor-1260	7,000 13,000 1,500	240 480 480	Ref. 10, Appendix 4.3 C, pp. 39-41, 127
50M (0 cm)	Aroclor-1248 Aroclor-1254 Aroclor-1260	21,000 57,000 27,000	800 1,600 1,600	Ref. 10, Appendix 4.3 C, pp. 39-41, 143
50M (5 cm)	Aroclor-1248 Aroclor-1254 Aroclor-1260	11,000 28,000 4,600	800 1,600 1,600	Ref. 10, Appendix 4.3 C, pp. 39-41, 158
50M (25 cm)	Aroclor-1248 Aroclor-1254 Aroclor-1260	14,000 39,000 6,100	800 1,600 1,600	Ref. 10, Appendix 4.3 C, pp. 39-41, 173
FY334 (DSL-SS-24)	Aroclor-1254	140	43	Attachment C; Ref. 6, Appendix C, pp. 310, 471-481, 484
FY335 (DSL-SS-24)	Aroclor-1254	820	44	Attachment C; Ref. 6, Appendix C, p. 317, 471-481, 485

Notes:
Data quality and usability are discussed in Attachment C to this documentation record.
Fg/kg = micrograms per kilogram = ppb = parts per billion.
S = Secondary dilution. When needed, second analysis dates and QC set IDs are provided.
SQL = Sample quantitation limit
in = inch
M = meter
cm = centimeter

2.4.2. Hazardous Waste Quantity

2.4.2.1.1. Hazardous Constituent Quantity (Tier A)

Insufficient data are available to evaluate hazardous constituent quantity, according to the HRS (Ref. 1, Sec. 2.4.2.1.1). A hazardous constituent quantity value is not assigned, because sufficient data is not available, and scoring proceeds to the evaluation of hazardous wastestream quantity, according to the HRS (Ref. 1, Sec. 2.4.2.1.1 and 2.4.2.1.2).

Hazardous Constituent Quantity Value: Not Calculated

2.4.2.1.2. Hazardous Wastestream Quantity (Tier B)

Insufficient data are available to evaluate a hazardous wastestream quantity, according to the HRS (Ref. 1, Sec. 2.4.2.1.2). A hazardous wastestream quantity value is not assigned, because sufficient data is not available, and scoring proceeds to the evaluation of volume, according to the HRS (Ref. 1, Sec. 2.4.2.1.2 and 2.4.2.1.3).

Hazardous Waste Stream Quantity Value: Not Calculated

2.4.2.1.3. Volume (Tier C)

Insufficient data are available to evaluate volume, according to the HRS (Ref. 1, Sec. 2.4.2.1.3). The length of the ditch is estimated to be about 3,600 feet, but the width and depth have not been measured and are probably inconsistent along the length of the ditch (Attachment B, Figure B-1). Therefore, a volume value is not assigned, because sufficient data is not available, and scoring proceeds to the evaluation of area, according to the HRS (Ref. 1, Sec. 2.4.2.1.3 and 2.4.2.1.4).

Volume Assigned Value: Not Calculated

2.4.2.1.4. Area (Tier D)

The length of the ditch is estimated to be about 3,600 feet, but the width has not been measured and is probably inconsistent along the length of the ditch (Attachment B, Figure B-1). Therefore, a value of "unknown" but greater than 0 (>0) is assigned to Tier D for this source.

Area Assigned Value: >0

2.4.2.1.5. Source Hazardous Waste Quantity Value

SOURCE 1 : ROLLINS OUTFALL DITCH	
Hazardous Waste Quantity Measures	**Surface Water Pathway**
Hazardous Constituent Quantity (Tier A)	NC
Hazardous Waste Stream Quantity (Tier B)	NC
Volume (Tier C)	NC
Area (Tier D)	>0
Assigned Source Hazardous Waste Quantity Value (Ref. 1, Sec. 2.4.2.1.5)	>0

Note:
NC = Not calculated

A value of >0 was selected and assigned as the source hazardous waste quantity value for Source 1 (Ref. 1, Sec. 2.4.2.1.5).

Source Hazardous Waste Quantity Value: >0

See Section 4.1.3.2.2 of this documentation record, for other requirements in assigning a value for the hazardous waste quantity factor value for the migration pathway (Ref. 1, Sect. 2.4.2.2).

SITE SUMMARY OF SOURCE DESCRIPTIONS

		CONTAINMENT			
Source No.	**Source Hazardous Waste Quantity Value**	**Groundwater**	**Surface Water**	**Gas**	**Air Particulate**
1	>0	NE	10	NE	NE
Total	**>0**				

Note:
NS = Not Scored

A containment factor of 10 was selected for the surface water pathway, based on evidence of hazardous substance migration from the source area (Ref. 1, Table 4-2) and the lack of a maintained engineered cover or functioning and maintained run-on control system or run-off management system (Ref. 3; Ref. 14, p. 1; Ref. 16, p. 1). An observed release of PCBs to Devil's Swamp Lake, Devil's Swamp and southern Bayou Baton Rouge has been documented (Ref. 6, pp. 14 and 38, Table 2 (Organic Contaminants in Sediments of Devil's Swamp Lake), p. 13, Figure 2 (Sample Location Map).

OTHER POTENTIAL SOURCES

The Devil's Swamp Lake site is located in an area of heavy industrial activity. Existing information for facilities in the watershed that may be potential sources of contamination in Devil's Lake was reviewed before preparing this HRS package. The following is a summary of other potential sources of hazardous substances in the area.

Petro Processors of Louisiana

Petro Processors of Louisiana, Inc. (Petro) is a National Priorities List (NPL) site (LAD057482713) located in the Devil's Lake watershed. The Petro site consists of two disposal areas known as the Brooklawn and Scenic Highway sites. The Brooklawn site is located at the north end of Devil's Swamp, and the Scenic Highway site is located between Bayou Baton Rouge and U.S. Highway 61 (Scenic Highway)(Attachment A to this documentation record, Figure A-2). The Brooklawn and Scenic Highway sites received waste from a number of industries from 1961 through 1980. Chlorinated hydrocarbons, polycyclic aromatic hydrocarbons, heavy metals, and oils contaminate the groundwater, surface water, and soil at the two sites. A Consent Decree was signed in 1984 to investigate and remediate the site (Ref. 60, pp. 1 and 2).

During the October 1993 Bayou Baton Rouge SI, several sediment samples were collected from the bayou at and downstream of the Scenic Highway site. These samples showed that portions of the bayou were contaminated with hexachlorobenzene (HCB), hexachlorobutadiene (HCBD), and other volatile and semivolatile organic hazardous substances (Ref. 8, pp. 14 and 21).

During the October 1993 Devil's Swamp ESI, several sediment samples were collected from Devil's Swamp directly downstream of the Petro (Brooklawn) site (Ref. 7, p. 11, Figure 2 (Sample Location Map)). These samples contained extremely high concentrations of organic hazardous substances, most notably HCB and HCBD (Ref. 7, pp. 12 and 21, Tables 1 and 2, and Figure 2). However, the characteristic Petro waste constituents-HCB and HCBD-were not detected downstream (south) of sample location DS-SS-18. For example, Devil's Swamp ESI sediment samples DS-SS-16, DS-SS-17, DS-SS-20, DS-SS-21, DS-SS-22, DS-SS-23, and DS-SS-24 did not contain any hazardous substances at concentrations greater than the sample quantitation limit (SQL), although estimated concentrations of anthracene, benz(a)anthracene, chrysene, dichlorobenzene, fluoranthene, fluorene, phenanthrene, and pyrene were detected at concentrations below SQLs (Ref. 7, pp. 12, 21, and 23, Tables 1, 2, and 6, and Figure 2).

Although releases from the Petro site have contaminated a large part of the Devil's Swamp watershed, Petro was not evaluated for this HRS package because it has been determined in Federal Court that investigation and remediation of waste originating from the Petro site is addressed under the existing Consent Decree (Ref. 60, pp. 1 and 2). The Petro Consent Decree addresses two disposal areas (Brooklawn and Scenic) and releases from those two disposal areas. The PCB contamination found in the sediment in Devil’s Swamp, Devil’s Swamp Lake, and Bayou Baton Rouge is not attributable to processes at the Petro Processors facility.

Schuylkill Metals Corporation

Schuylkill Metals Corporation (Schuylkill) owns and operates a secondary lead smelter at the west end of Brooklawn Drive, north of the Petro Processors Brooklawn site (Attachment A to this documentation record, Figure A-2; Ref. 50, p. 1; Ref. 51, p.1). Schuylkill's hazardous waste treatment, storage, and disposal (TSD) facility operating permit, issued jointly by EPA and the Louisiana Department of Environmental Quality (LDEQ), (LAD008184137) became effective on November 1, 1993 (Ref. 51, pp. 1 and 2). The facility also holds a permit that authorizes discharge to Bayou Baton Rouge under the National Pollutant Discharge Elimination System (Ref. 51, p. A2, under Existing Environmental Permits).

Schuylkill is a resource recovery facility that recycles spent lead acid batteries and other inorganic lead bearing materials into metallic lead pig and block ingots (Ref. 50, p. 1). Schuylkill's raw materials include materials classified as hazardous waste, such as emission control dust and characteristic lead bearing materials (Ref. 50, p. 2).

Some of these raw materials may contain arsenic, cadmium, chromium, selenium, or silver at concentrations that exceed toxicity characteristic leaching procedure (TCLP) limits. Slag is produced as a blast furnace product. The composition of the slag is approximately 1 percent lead. Schuylkill states that the lead bearing slag is stabilized, and the slag is nonhazardous based on TCLP (Ref. 50, pp. 1, 2 and 4). The stabilized lead slag is disposed on site in a stabilization unit; there are also two closed lead slag waste piles on site (Ref. 51, pp. 8, B5, and C1).

During the 1993 Site Inspection (SI) of Bayou Baton Rouge and the ESI of Devil's Swamp, several sediment samples were collected from the bayou that showed elevated concentrations of lead downstream of the Schuylkill facility. The highest concentration of lead detected upstream of the Schuylkill site was 28.5 mg/kg at sample location SS-12 (MFZ652). Downstream of the Schuylkill facility, concentrations of lead were as high as 1,410 mg/kg. Elevated concentrations of arsenic, cadmium, chromium, nickel, and zinc were also detected in the sediment. (Ref. 8, p. 21, and Tables 3, 5, and 7). High levels of lead (up to 310 mg/kg at sample location DS-SS-35) and cadmium (up to 62.3 mg/kg at DS-SS-32) were present downstream of Schuylkill, south of Hall Buck Marine Road, in the area of extensive organic contamination attributable to Petro (Ref. 7, p. 21, and pp. 19 and 20, Table 3 (Inorganic Contaminants Detected in Sediments of Northern Devil's Swamp)). The presence of these metal contaminants may be attributable to Schuylkill.

Schuylkill Metals Corporation was not evaluated as a source because PCB contamination found in the sediment in Devil’s Swamp, Devil’s Swamp Lake, and Bayou Baton Rouge is not attributable to processes at the Schuylkill facility. In addition, the Petro Consent Decree may not address contamination of Bayou Baton Rouge north of the Scenic disposal area and may not address contamination downstream of Scenic disposal area, or other area of Bayou Baton Rouge, with the exception of a small "spill area" historically defined within the main channel, immediately downstream of the Brooklawn disposal area.

Reynolds Metals Company

Reynolds Metals Company operates a coke calcinating plant on Brooklawn Drive north of the Petro Brooklawn site (Attachment A to this documentation record, Figure A-2). This facility has a NPDES permit that allows discharge of treated cooling water, clean-up water and storm water runoff into Bayou Baton Rouge (Ref. 53, pp. 1 and 2). Site documentation does not support attribution of PCBs in Devil's Lake to processes at this facility.

Union Tank Car Company

Union Tank Car Company owned an inactive railroad tank car inspection and repair facility located on Brooklawn Drive, east of the Petro Brooklawn site (Attachment A to this documentation record, Figure A-2; Ref. 54, p. 1). The Union Tank Car facility is now owned by Rice-Carden, Inc. The facility consists of (1) a large geodesic dome for indoor tank car repairs, (2) a wastewater treatment plant, and (3) railroad access tracks and other ancillary facilities (Ref. 54, p. 3). The facility's NPDES permit expired in 1980 (Ref. 59, p. 1).

On April 1, 1981, methyl mercaptan was spilled at the facility when valves to a tank were left open (Ref. 56, p. 1). On April 2, 1981, 13 samples of water, sludge, spilled liquid, and effluent were collected by the Louisiana Department of Natural Resources (LDNR) personnel (Ref. 57, pp. 1 and 2). LDNR reported that hazardous substances in these samples were present in (1) ditch bottoms (due to spills) at significant concentrations, (2) tank cleaning scale (hardened product residues and tank rust) waste piles, and (3) the facility's discharge effluent at low concentrations (Ref. 58, p. 1 and Table I).

A follow-up inspection on April 6, 1991, by LDNR, indicated that spillage was a serious problem at the site. The inspection noted several incidences of unidentified liquids spilled on the ground, and that the spilled liquids and runoff from waste piles drain through the storm water outfall, bypassing the wastewater treatment system (Ref. 55, pp. 1 and 2). Three large electrical transformers were stored on the ground (no containment), next to a tributary of Baton Rouge Bayou. The transformers are alleged to be PCB free, but the company could not produce laboratory analysis to confirm this fact (Ref. 55, p. 2).

In 1989, before Union Tank Car closed the wastewater treatment ponds, sludge samples from the wastewater treatment plant were collected and analyzed for total metals. The analysis indicated that the sludges contained elevated levels of barium (up to 546 ppm), cadmium (up to 33.9 ppm), chromium (up to 188 ppm), mercury (up to 2.0 ppm), and lead (up to 1,020 ppm) (Ref. 54, Figure 3 and Table 2). The sludges were not analyzed for organic compounds (Ref. 54, pp. 4 and 5, Table 2).

Based on the LDNR 1981 sampling data, this facility may have released hazardous substances to Bayou Baton Rouge. However, this facility was not evaluated for this HRS package because site documentation and existing data does not support attribution of PCB contamination in Devil's Lake to this facility. In addition, the Petro Consent Decree may not address contamination of Bayou Baton Rouge north of the Scenic disposal area and may not address contamination downstream of Scenic disposal area, or other area of Bayou Baton Rouge, with the exception of

a small "spill area" historically defined within the main channel, immediately downstream of the Brooklawn disposal area.

Grant Chemical

The Grant Chemical Division of Ferro Corporation (Grant Chemical) facility, LAD092104389, is located in the north part of the Bayou Baton Rouge drainage area, along U.S. Highway 61 (Scenic Highway), in Zachary, Louisiana (Attachment A to this documentation record, Figure A-1; Ref. 36, p. 1). The facility manufactures and blends inorganic and organic chemicals, including dioxane, dioxolane, and vinyl crotonate (Ref. 37, p. 1; Ref. 38, p. 1). In 1987, Grant Chemical had applied for a TSD permit reclassification under RCRA, to change from the operation of hazardous waste impoundments and greater than 90 day storage containers and tanks, to "Generator Only" status (Ref. 39, p. 1). These units were closed in December 1985, in accordance with closure plan approved by LDEQ (Ref. 40, p. 1; Ref. 41, p. 1). LDEQ accepted the closure in February 1986, and in August 1987, Grant Chemical withdrew from the permitting process, converting from a hazardous waste TSD facility to a generator (Ref. 39, p. 1; Ref. 42, p. 1; Ref. 43, pp. 1 and 2).

Grant Chemical has been authorized to discharge effluent to Bayou Baton Rouge and the Mississippi River since 1978 (Ref. 44, p. 1). From 1978 to 1983, Grant Chemical discharged effluent to Bayou Baton Rouge (Ref. 44, pp. 2 through 5; Ref. 45, pp. 2 and 4). In 1983, Grant Chemical completed construction of a pipeline to the Mississippi River for the discharge of treated process wastewater (Ref. 44, pp. 1-11).

Several releases of hazardous waste into the Bayou Baton Rouge drainage have been documented and other releases have been alleged. On January 23, 1975, an unknown waste material was discharged into Bayou Baton Rouge. Analysis of the waste discharge streams indicated that substances not specified in Grant Chemical's discharge permit application were contained in the discharge and that the concentration of the various substances exceeded the limits specified in the permit application (Ref. 46, p. 1 (Notice of Determination, Louisiana Stream Control Commission)). The Louisiana Wild Life and Fisheries Commission, Division of Water Pollution Control, reported that the effluent contained 56 ppb of mercury in a sample collected in November 1974 (Ref. 47, p. 1). Grant Chemical also reported high concentrations of mercury-up to 24.2 ppm-in sediments in its aerated lagoon (Ref. 48, Figure 1 (Mercury Sampling Schedule)).

On June 22, 1985, Grant Chemical inadvertently discharged 48,000 gallons of pretreated secondary treatment influent to Bayou Baton Rouge. This discharge involved material that was classified as hazardous waste because it contained 1,4-dioxane. Grant Chemical estimated that 22.8 lbs of 1,4-dioxane were discharged during this release (Ref. 49, pp. 1, 2 and 3 (Unpermitted Accidental Discharge)). In 1974, a former Grant Chemical employee alleged that Grant Chemical routinely discharged hazardous waste including mercuric sulfide and several organic chemicals to Bayou Baton Rouge (Ref. 37, pp. 1, 2 and 3).

The sediments in Bayou Baton Rouge downstream of Grant Chemical have not been sampled and analyzed to determine whether Grant has contributed to the contamination of the Bayou. Based on the information presented above, this facility may have released hazardous substances to Bayou Baton Rouge. However, Grant Chemical was not evaluated for this HRS package because PCB contamination found in Devil's Lake is not attributable to processes at this facility.

Agway Industries and the Baton Rouge Port Commission

Agway Industries and the Baton Rouge Port Commission are located east and southeast of Devil's Swamp Lake (Attachment A to this documentation record, Figure A-2). No information was available in EPA or LDEQ files to determine whether hazardous waste activities were conducted at these facilities. Surface water runoff from these facilities drains to the south, into the Baton Rouge barge harbor instead of Devil's Swamp (Ref. 3, Scotlandville, LA (USGS Topographic Map). Existing documentation does not support attribution of PCB contamination in Devil's Lake to processes at this facility. Therefore, these facilities were not evaluated for this HRS package.

Kansas City Southern Railroad

The Kansas City Southern Railroad spur is located on the western boundary of the Rollins facility (Attachment A, Figure A-2). Samples have not been collected adjacent to the railroad tracks to determine if runoff from the tracks may be contributing to the PCB contamination in Devil's Lake Swamp. These tracks end at the Baton Rouge Barge Harbor. The railroad is potential source of PCB contamination.

4.0 SURFACE WATER MIGRATION PATHWAY

4.1 OVERLAND/FLOOD MIGRATION COMPONENT

General Consideration

Sample data from the 1993 ESIs of Devil's Swamp and Devil's Swamp Lake indicated that PCBs attributable to processes at the former Rollins facility were present in sediment samples collected from the Rollins outfall ditch and the lake and swamp (Ref. 6, pp. 14 and 38).

PCBs, may include one or more of Aroclor-1248, Aroclor-1254, and Aroclor-1260.

4.1.1.1 Definition of Hazardous Substance Migration Path for Overland/Flood Component

Watershed Description

Devil's Swamp is a 7-square-mile backwater swamp located on the east bank of the Mississippi River, north of Baton Rouge, Louisiana (Ref. 4, Zachary, LA (USGS Topographic Map); Attachment A and Attachment D to this documentation record). Devil's Swamp is bordered by Hall-Buck Marine Road to the north, a farm, the former Rollins facility and the Baton Rouge barge harbor to the east, and the Mississippi River to the south and west. Devil's Swamp receives surface water runoff primarily from the northern part of Bayou Baton Rouge, which enters the swamp near Hall-Buck Marine Road, and from the farm and former Rollins facility to the east. Surface water flow in the swamp is generally from north to south, although a seasonal high-water stage in the Mississippi River may cause water to back-up into the swamp from the south (Ref. 3, (USGS Topographic Maps); Ref. 16, p. 1; Ref. 22, Aerial Photograph).

Devil's Swamp Lake is a man-made, crescent-shaped lake that was excavated from the east-central part of Devil's Swamp in 1973, as a borrow material source for levee construction around the Baton Rouge barge harbor (Ref. 16, p. 1). Devil's Swamp Lake divides Devil's Swamp into northern and southern halves. Surface water flow from the northern part of Devil's Swamp enters Devil's Swamp Lake, and Devil's Swamp Lake drains into the southern part of Devil's Swamp. Southern Bayou Baton Rouge consists of several channels that drain the southern part of Devil's Swamp into the Mississippi River (Ref. 3; Ref. 22, Aerial Photograph).

Hazardous Substance Migration Path

The location of the Rollins outfall ditch is shown in Attachment B to this documentation record. According to the HRS, a hazardous substance migration path consists of (1) the overland segment from the source to the PPE, and (2) the in-water segment, from the PPE downstream to the 15-mile target distance limit. There is no overland segment for this site because the Rollins outfall ditch drains directly into Devil's Swamp Lake (Ref. 3; Attachment B to this documentation record).

The in-water segment of the hazardous substance migration path begins at the PPE, which is the terminus of the Rollins outfall ditch at Devil's Swamp Lake. This point is a land spit that juts into Devil's Swamp Lake from the lake's north bank (Ref. 6, Appendix A (ESI Photo Documentation), p. A-18, Photograph No. 36; Ref. 22, Aerial Photograph).

During the 1993 ESI of Devil's Swamp Lake, 28 sediment samples were collected from the lake (Ref. 6, pp. 11, 12 and 13, Table 1 (Sample Description) and p. 13, Figure 2 (Sample Location Map)). Twenty-two of these sediment samples contained PCB concentrations that meet the requirements of observed release (Ref. 1, Sec. 2.3; Ref. 6, pp. 14 and 38, pp. 15 through 32, Table 2 (Organic Contaminants in Sediments of Devil's Swamp Lake)). Devil's Swamp Lake ESI sediment sampling locations are shown in Attachment D to this documentation record, Figure D-1.

Devil's Swamp Lake drains into the southern part of Devil's Swamp, through several glades. The drainage rechannels into the southern part of Bayou Baton Rouge, which flows south toward the Mississippi River. Sediment samples collected during the 1993 ESI of Devil's Swamp showed a release of PCBs in Devil's Swamp at six of 14 sampling locations south of Devil's Swamp Lake and one location about 400 feet northwest of the lake (Ref. 1, Sec. 2.3; Ref. 3; Ref. 7, pp. 23 and 43, pp. 8, 9 and 10, Table 1 (Sample Description), pp. 25 through 30, Table 6 (Organic Contaminants Detected in Sediments of North-Central Devil's Swamp), pp. 35 through 40, Table 10 (Organic Contaminants Detected in Sediments of Southern Devil's Swamp), and pp. 44, 45 and 46, Table 12 (Organic Contaminants Detected in Sediments of Southern Bayou Baton Rouge), and p. 11, Figure 2 (Sample Location Map)). Copies of Devil's Swamp ESI sediment sampling location maps are appended to this documentation record, Attachment D, Figure D-1, for the convenience of the reader.

Southern Bayou Baton Rouge enters the Mississippi River about 3.5 miles downstream of the PPE. The in-water segment of the hazardous substance migration path continues southward in the Mississippi River to the 15-mile target distance limit, which is located at river mile 223.75 (Ref. 3).

Devil's Swamp and Devil's Swamp Lake are fisheries (Ref. 10, p. 5.2-3; Ref. 21, p. 1; Ref. 25, p. 1). Devil's Swamp Lake is surrounded by wetlands, and Devil's Swamp is a wetland (Ref. 5; Attachment E). These targets are subject to Level II concentrations from the PPE to Devil's Swamp sampling location DS-SS-01 (FY401), 2.09 miles downstream of the PPE (Ref. 1, Sec. 2.5; Ref. 3; Ref. 6, pp. 14 and 38, Table 2, Figure 2; Ref. 7, pp. 23 and 43, Tables 6, 10, and 12, and Figure 2). Wetlands and fisheries subject to potential contamination are also present along the hazardous substance migration path from the FY401 sample location to the 15-mile target distance limit (Ref. 3; Ref. 5; Ref. 10, p. 5.2-3; Attachment E to this documentation record).

In 1986, LDEQ collected fish tissue samples from Devil's Swamp Lake. Analysis of these samples indicated the bioaccumulation of PCBs and other hazardous substances in fish tissue (Ref. 17; Ref. 18, p. 1). Follow up analyses by the State indicated that levels of HCB and HCBD, attributable to Petro site, exceed the "emergency guidelines" utilized by LDEQ and the Louisiana Department of Health and Human Resources (LDHHR) in assessing seafood contamination in certain areas of the Calcasieu estuary (Ref. 18, p. 1). As a result of the fish tissue analyses, LDEQ and LDHHR issued a fish consumption advisory and posted warning signs around Devil's Swamp Lake (Ref. 19, p. 1; Ref. 20, pp. 1 and 2; Ref. 21, p. 1).

4.1.2.1 LIKELIHOOD OF RELEASE

4.1.2.1.1 Observed Release

Chemical Analysis:

Background Concentration

Ten sediment samples collected during the Devil's Swamp ESI were selected as representative of background conditions. The selected background samples are listed in the following table. These samples show that PCBs are not present in background sediments of Devil's Swamp. The background samples are FY416 (DS-SS-16), FY417 (DS-SS-17), FY420 (DS-SS-20), FY421 (DS-SS-21), FY422 (DS-SS-22), FY423 (DS-SS-23), FY424 (DS-SS-24), and FY436 (DS-SS-36) (Ref. 6, p. 14; Ref. 7, p. 12).

BACKGROUND SEDIMENT SAMPLES				
Sample	**Sampling Location**	**Depth (inches)**	**Date/Time**	**Reference**
FY412 (DS-SS-12)	Devil's Swamp	0-12	10-21-92/1100	Ref. 7, pp. 8, 9 and 10, Table 1 (Sample Description), p. 11, Figure 2 (Sample Location Map), Appendix B (Data Summary Tables) and Appendix C (Contract Laboratory Program (CLP) Documentation; Ref. 27 (Excerpts from the logbook).
FY413 (DS-SS-13)	Devil's Swamp	0-12	10-21-92/1148	
FY416 (DS-SS-16)	Devil's Swamp	0-12	10-22-92/1145	
FY417 (DS-SS-17)	Devil's Swamp	0-20	10-22-92/1215	
FY420 (DS-SS-20)	Devil's Swamp	0-12	10-22-92/1600	
FY421 (DS-SS-21)	Devil's Swamp	0-24	10-23-92/1300	
FY422 (DS-SS-22)	Devil's Swamp	0-12	10-26-92/0930	
FY423 (DS-SS-23)	Devil's Swamp	0-12	10-26-92/1020	
FY424 (DS-SS-24)	Devil's Swamp	4-12	10-26-92/1115	
FY436 (DS-SS-36)	Devil's Swamp	0-7	10-28-92/1110	

The locations of all Devil's Swamp and Devil's Swamp Lake ESI sediment samples used to score this site are shown in Attachment D, Figure D-1. The 10 samples used to establish background levels are representative of background conditions in this area and are comparable to the sediment release samples collected in Devil's Swamp Lake (Ref. 6, pp. 10, 11 and 12, Table 1 (Sample Description) and p. 13, Figure 2 (Sample Location Map); Ref. 7, pp. 8, 9 and 10, Table 1 (Sample Description) and p. 11, Figure 2 (Sample Location Map); Ref. 26, pp. 1 and 2; Ref. 27, pp. 1 and 2). Devil's Swamp Lake, Devil's Swamp and Bayou Bayou Rouge are in the same watershed system (Ref. 3, p. 1; Ref. 4, p. 1). The background and release samples were collected from similar soil types that are frequently flooded (Ref. 65, pp. 1-8).

BACKGROUND SEDIMENT SAMPLE DATA				
Sample	**Hazardous Substance**	**Concentration (µg/kg)**	**Sample Quantitation Limit (µg/kg)**	**Reference**
FY412 (DS-SS-12)	PCBs[a]	63U	63	Ref. 7, Appendix C, pp. 220, 569-581, 583, 588-594
FY413 (DS-SS-13)	PCBs[a]	50U	50	Ref. 7, Appendix C, pp. 227, 569-581, 583, 588-594
FY416 DS-SS-16	PCBs[a]	84U	84	Ref. 7, Appendix C, pp. 248, 633-641, 642, 644-652
FY417 DS-SS-17	PCBs[a]	80U	80	Ref. 7, Appendix C, pp. 255, 633-641, 642, 644-652
FY420 DS-SS-20	PCBs[a]	75U	75	Ref. 7, Appendix C, pp. 276, 633-641, 643, 644-652
FY421 DS-SS-21	PCBs[a]	73U	73	Ref. 7, Appendix C, pp. 283, 633-641, 643, 644-652
FY422 DS-SS-22	PCBs[a]	82U	82	Ref. 7, Appendix C, pp. 290, 653-665, 666, 672-681
FY423 DS-SS-23	PCBs[a]	58U	58	Ref. 7, Appendix C, pp. 297, 653-665, 666, 672-681
FY424 DS-SS-24	PCBs[a]	89U	89	Ref. 7, Appendix C, pp. 304, 653-665, 666, 672-681
FY436 (DS-SS-36)	PCBs[a]	61U	61	Ref. 7, Appendix C, pp. 422, 653-665, 671, 672-681

Notes:
Data usability is discussed in Attachment C to this documentation record.
PCB = Polychlorinated biphenyl.
Fg/kg = micrograms per kilogram = ppb = parts per billion.
U = qualifier indicating that the compound was analyzed for but not detected.
[a] Data reported for PCBs are the same for Aroclor-1248, Aroclor-1254, and Aroclor-1260.

Observed Release Samples

During the October 1993 ESIs of Devil's Swamp Lake and Devil's Swamp, PCB concentrations in 29 sediment samples met the criteria for observed release (Ref. 1, Sec. 2.3; Ref. 6, pp. 9 through 38, Figure 2, Tables 1 and 2, Appendices B and C; Ref. 7, pp. 12 through 47, Figure 2, Tables 1 and 2, Appendices B and C). A map showing the location of these samples is presented in Attachment D, Figures D-2 and D-3 of this documentation record.

OBSERVED RELEASE SEDIMENT SAMPLES

Sample	Sampling Location	Depth (inches)	Date and Time	Reference
FY312 (DSL-SS-02)	Devil's Swamp Lake	0-11	10-20-92 1330	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-6; Ref. 26, pp. 1, 2
FY315 (DSL-SS-05)	Devils's Swamp Lake	0-32	10-21-92 1015	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-8; Ref. 26, pp. 1, 2
FY317 (DSL-SS-07)	Devil's Swamp Lake Duplicate of DSL-SS-07	0-26	10-21-92 1225	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-10; Ref. 26, pp. 1, 2
FY318 (DSL-SS-08)		0-26	10-21-92 1225	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-10; Ref. 26, pp. 1, 2
FY319 (DSL-SS-09)	Devils's Swamp Lake	0-20	10-21-92 1340	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-10; Ref. 26, pp. 1, 2
FY321 (DSL-SS-11)	Devils's Swamp Lake	0-11	10-21-92 1435	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-11; Ref. 26, pp. 1, 2
FY322 (DSL-SS-12)	Devils's Swamp Lake	0-24	10-21-92 1545	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-12; Ref. 26, pp. 1, 2
FY323 (DSL-SS-13)	Devils's Swamp Lake	0-20	10-21-92 1600	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-12; Ref. 26, pp. 1, 2
FY325 (DSL-SS-15)	Devil's Swamp Lake Duplicate of DSL-SS-15	0-24	10-22-92 0950	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-13; Ref. 26, pp. 1, 2
FY326 (DSL-SS-16)		0-24	10-22-92 0950	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-13; Ref. 26, pp. 1, 2

OBSERVED RELEASE SEDIMENT SAMPLES				
Sample	**Sampling Location**	**Depth (inches)**	**Date and Time**	**Reference**
FY327 (DSL-SS-17)	Devils's Swamp Lake	0-12	10-22-92 1100	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-14; Ref. 26, pp. 1, 2
FY328 (DSL-SS-18)	Devils's Swamp Lake	0-20	10-22-92 1125	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-14; Ref. 26, pp. 1, 2
FY329 (DSL-SS-19)	Devils's Swamp Lake	0-48	10-22-92 1235	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-15; Ref. 26, pp. 1, 2
FY330 (DSL-SS-20)	Devils's Swamp Lake	0-36	10-22-92 1325	Ref. 6, pp. 9 and 38, Table 1, Appendix A, p. A-15, A-16; Ref. 26, pp. 1, 2
FY331 (DSL-SS-21)	Devils's Swamp Lake	0-15	10-22-92 1415	Ref. 6, pp. 10 and 38, Table 1, Appendix A, p. A-16; Ref. 26, pp. 1, 2
FY332 (DSL-SS-22)	Devils's Swamp Lake	0-32	10-22-92 1435	Ref. 6, pp. 10 and 38, Table 1, Appendix A, p. A-17; Ref. 26, pp. 1, 2
FY333 (DSL-SS-23)	Devils's Swamp Lake	0-30	10-22-92 1515	Ref. 6, pp. 10 and 38, Table 1, Appendix A, p. A-17; Ref. 26, pp. 1, 2
FY336 (DSL-SS-26)	Devils's Swamp Lake	0-48	10-23-92 1235	Ref. 6, pp. 10 and 38, Table 1, Appendix A, p. A-20; Ref. 26, pp. 1, 2
FY337 (DSL-SS-27)	Devil's Swamp Lake Duplicate of DSL-SS-27	0-24	10-23-92 1315	Ref. 6, pp. 10 and 38, Table 1, Appendix A, p. A-20; Ref. 26, pp. 1, 2
FY338 (DSL-SS-28)		0-24	10-23-92 1315	Ref. 6, pp. 10 and 38, Table 1, Appendix A, p. A-20; Ref. 26, pp. 1, 2
FY339 (DSL-SS-29)	Devils's Swamp Lake	0-60	10-23-92 1340	Ref. 6, pp. 10 and 38, Table 1, Appendix A, p. A-21; Ref. 26, pp. 1, 2
FY340 (DSL-SS-30)	Devils's Swamp Lake	0-24	10-23-92 1415	Ref. 6, pp. 10 and 38, Table 1, Appendix A, p. A-21; Ref. 26, pp. 1, 2

OBSERVED RELEASE SEDIMENT SAMPLES				
Sample	**Sampling Location**	**Depth (inches)**	**Date and Time**	**Reference**
FY401 (DSL-SS-01)	Devils's Swamp Lake	0-14	10-19-92 1430	Ref. 7, pp. 7 and 47, Table 1, Appendix A, p. A-1; Ref. 27, pp. 1, 2
FY404 (DSL-SS-04)	Devils's Swamp Lake	0-16	10-19-92 1645	Ref. 7, pp. 7 and 47, Table 1, Appendix A, p. A-2; Ref. 27, pp. 1, 2
FY408 (DSL-SS-08)	Devils's Swamp Lake	0-12	10-20-92 1405	Ref. 7, pp. 7 and 47, Table 1, Appendix A, p. A-5; Ref. 27, pp. 1, 2
FY409 (DSL-SS-09)	Devils's Swamp Lake	0-10	10-20-92 1520	Ref. 7, pp. 7 and 47, Table 1, Appendix A, p. A-6; Ref. 27, pp. 1, 2
FY414 (DSL-SS-14)	Devils's Swamp Lake	0-12	10-21-92 1430	Ref. 7, pp. 7 and 47, Table 1, Appendix A, p. A-10; Ref. 27, pp. 1, 2
FY415 (DSL-SS-15)	Devils's Swamp Lake	0-12	10-21-92 1600	Ref. 7, pp. 7 and 47, Table 1, Appendix A, p. A-11; Ref. 27, pp. 1, 2
FY425 (DSL-SS-25)	Devils's Swamp Lake	0-16	10-26-92 1220	Ref. 7, pp. 7 and 47, Table 1, Appendix A, p. A-19; Ref. 27, pp. 1, 2

All of the sediment samples presented on the table above have PCB concentrations that meet the criteria for an observed release to surface water (Ref. 1, Sec. 2.3). All of the contaminated samples collected in Devil's Swamp Lake were located along the in-water segment of the hazardous substance migration path downstream of the PPE (Attachment D, Figures D-2 and D-3).

OBSERVED RELEASE SEDIMENT SAMPLE DATA				
Sample	**Hazardous Substance**	**Concentration (µg/kg)**	**SQL (µg/kg)**	**Reference**
FY312 (DSL-SS-02)	Aroclor-1254	350 Y	57	Ref. 6, Appendix C, pp. 150, 457
FY315 (DSL-SS-05)	Aroclor-1254	120	69	Ref. 6, Appendix C, pp. 171, 458
FY317 (DSL-SS-07)	Aroclor-1254	1,200 C	82	Ref. 6, Appendix C, pp. 185, 459
FY318 (DSL-SS-08)	Aroclor-1254	380 Y	87	Ref. 6, Appendix C, pp. 192, 459
FY319 (DSL-SS-09)	Aroclor-1254	330 Y	69	Ref. 6, Appendix C, pp. 199, 459
FY321 (DSL-SS-11)	Aroclor-1254	1,300 PC	84	Ref. 6, Appendix C, pp. 213, 460
FY322 (DSL-SS-12)	Aroclor-1254	470 Y	58	Ref. 6, Appendix C, pp. 220, 460
FY323 (DSL-SS-13)	Aroclor-1254	2,200 C	67	Ref. 6, Appendix C, pp. 227, 461
FY325 (DSL-SS-15)	Aroclor-1248 Aroclor-1254 Aroclor-1260	3,800 C 5,800 PC 610 PC	56 56 56	Ref. 6, Appendix C, pp. 244, 482
FY326 (DSL-SS-16)	Aroclor-1248 Aroclor-1254 Aroclor-1260	5,200 C 6,400 PC 1,600 PC	58 58 58	Ref. 6, Appendix C, pp. 254, 482
FY327 (DSL-SS-17)	Aroclor-1248 Aroclor-1260	220 170	47 47	Ref. 6, Appendix C, p. 261
FY328 (DSL-SS-18)	Aroclor-1248 Aroclor-1254	2,000 C 3,400 C	290 290	Ref. 6, Appendix C, pp. 268, 483
FY329 (DSL-SS-19)	Aroclor-1254	1,300 C	63	Ref. 6, Appendix C, pp. 275, 483
FY330 (DSL-SS-20)	Aroclor-1248 Aroclor-1254 Aroclor-1260	2,900 C 6,000 C 870 PC	240 240 240	Ref. 6, Appendix C, pp. 282, 483
FY331 (DSL-SS-21)	Aroclor-1260	3,000 C	240	Ref. 6, Appendix C, pp. 289, 484
FY332 (DSL-SS-22)	Aroclor-1248 Aroclor-1254	920 PC 2,500 C	290 290	Ref. 6, Appendix C, pp. 296, 484
FY333 (DSL-SS-23)	Aroclor-1248 Aroclor-1254	910 C 1,300 C	230 230	Ref. 6, Appendix C, pp. 303, 484
FY336 (DSL-SS-26)	Aroclor-1254 Aroclor-1260	1,600 C 1,100 PY	59 59	Ref. 6, Appendix C, pp. 324, 486

OBSERVED RELEASE SEDIMENT SAMPLE DATA				
Sample	**Hazardous Substance**	**Concentration (µg/kg)**	**SQL (µg/kg)**	**Reference**
FY337 (DSL-SS-27)	Aroclor-1254	390 Y	49	Ref. 6, Appendix C, pp. 331, 486
FY338 (DSL-SS-28)	Aroclor-1254	360 Y	50	Ref. 6, Appendix C, pp. 338, 486
FY339 (DSL-SS-29)	Aroclor-1254	250 P	54	Ref. 6, Appendix C, pp. 345, 487
FY340 (DSL-SS-30)	Aroclor-1248 Aroclor-1254	340 Y 700 Y	47 47	Ref. 6, Appendix C, pp. 352, 487
FY401 (DS-SS-01)	Aroclor-1254	91 P	63	Ref. 7, Appendix C, pp. 142, 587
FY404 (DS-SS-04)	Aroclor-1254	120	59	Ref. 7, Appendix C, pp. 163, 586
FY408 (DS-SS-08)	Aroclor-1254	76	74	Ref. 7, Appendix C, pp. 191, 584
FY409 (DS-SS-09)	Aroclor-1254	81	62	Ref. 7, Appendix C, pp. 198, 584
FY414 (DS-SS-14)	Aroclor-1248 Aroclor-1254	120 P 130	85 85	Ref. 7, Appendix C, pp. 234, 582
FY415 (DS-SS-15)	Aroclor-1248 Aroclor-1254	94 P 89	76 76	Ref. 7, Appendix C, pp. 241, 582
FY425 (DS-SS-25)	Aroclor-1248 Aroclor-1260	530 260	94 94	Ref. 7, Appendix C, pp. 311, 667

Notes:
Data quality and usability are discussed on the next page and Attachment C to this documentation record.
µg/kg = micrograms per kilogram = ppb = parts per billion.
C = Identification of one or more Aroclors was confirmed by GC/MS.
P = The difference between two GC columns is greater than 25%, and the lower value is reported.
Y = Identification of the Aroclor was not confirmed by GC/MS.
SQL = Sample quantitation limit.

SQL = CRQL x CEV/SEV x Dilution Factor x 30 grams/sample weight x 1/%solids
CEV = concentrated extract volume (ul) from FORM I
SEV= standard concentrated extract volume (5,000 ul if GPC cleanup was conducted; 10,000 ul if GPC cleanup was not conducted)

Data Quality:

Twenty-nine samples were used to document an observed release. PCB data from many of these samples were qualified by the CLP laboratory, indicating there may be some bias in the reported value. Low bias samples can be used to document an observed release, because the reported concentration is an underestimate of the true concentration. Conversely, high-biased samples are an overestimate of the true concentration. Therefore, high-biased samples can be used to document an observed release if the concentrations are first adjusted to account for this overestimate according to the EPA guidance set forth in the fact sheet "Using Qualified Data to Document an Observed Release and Observed Contamination" (Ref. 63). Unknown-bias data are usable on the same basis as high-bias data. Reference 63 provides guidance on how to use biased data to document an observed release. Attachment C contains a sample-by-sample discussion of data quality and usability based on (1) the data validation and laboratory case narratives contained in Reference 6, Appendix C, and Reference 7, Appendix C, and (2) the procedure provided in Reference 63.

Attribution:

Rollins operated a hazardous waste disposal facility that began receiving waste in 1971. Historically, about 108 waste management units were active at the site. Rollins treated and disposed of noncombustible and nonrecoverable wastes by incineration, stabilization, and landfilling (Ref. 10, p. v). Rollins has documented on-site disposal of a wide range of hazardous substances, including PCBs, that were identified in Devil's Swamp Lake sediments at concentrations which document an observed release (Ref. 10, pp. 3-87 and 3-88, Tables 3.3-5 and 3.5-1, Figure 3.3-1). Process wastewater generated during disposal activities was treated prior to discharge through NPDES outfall 001 (Ref. 9, p. 1 of Part I; Ref. 10, p. v).

The Petro Brooklawn NPL site is located at the north end of Devil's Swamp (Ref. 7, p. 2, Figure 2). During the October 1993 Devil's Swamp ESI, several sediment samples were collected at the Petro site. These samples contained extremely high concentrations of organic hazardous substances, most notably HCB and HCBD (Ref. 7, pp. 12 and 21, Tables 1 and 2, and Figure 2). However, characteristic Petro waste constituents-HCB and HCBD-were not detected downstream (south) of sample location DS-SS-18. Devil's Swamp ESI sediment samples DS-SS-16, DS-SS-17, DS-SS-20, DS-SS-21, DS-SS-22, DS-SS-23, and DS-SS-24 did not contain any hazardous substances at concentrations greater than the SQL (Ref. 7, pp. 12, 21, and 23, Tables 1, 2, and 6, and Figure 2).

In June 1980, the Louisiana Department of Natural Resources, Office of Environmental Affairs, collected samples from the lake (Ref. 14, p. 1). The investigation team reported that "water samples from the bottom of the lake showed very dark water that exhibited the chemical smell characteristic of Rollins effluent". It was reported that "Anytime the bottom is disturbed, oil bubbles to the surface". "Mud samples taken from the effluent end of the lake were jet black, oily, and exhibited the smell mentioned above" (Ref. 14, p.2). During the investigation, wading birds, alligators, fish, frogs and aquatic insects were seen (Ref. 14, p. 2). The samples were analyzed for temperature, dissolved Oxygen, Saturation, Conductivity and pH, not for organic or inorganic parameters (Ref. 14, p. 3 (Parameter Averages)).

A 1985 LDEQ investigation of Devil's Swamp and Devil's Swamp Lake indicated the presence of PCB isomer Aroclor-1224 (0.012 parts per million, or 12 µg/kg) at a location in northern Bayou Baton Rouge upstream of Devil's Swamp and the Petro site, and at another location (0.19 parts per million, or 190 µg/kg) at the north end of Devil's Swamp, about 200 yards downstream of the Petro site (Ref. 16, p. 7,

Table 1). These concentrations were below the background level used by LDEQ (Ref. 16, p. 3). Additionally, these concentrations (12 and 190 µg/kg) do not show a significant difference between sampling locations upstream and downstream of the Petro site (Ref. 10, pp. 2.3.2-2 and 2.3.2-3, Table 2.3.2-1C; Ref. 16). The LDEQ data, and the data from the Devil's Swamp ESI, do not indicate that the Petro site is a source of the PCB contamination in Devil's Swamp Lake, Devil's Swamp, or southern Bayou Baton Rouge.

The 1985 LDEQ investigation indicated that the Rollins facility was the probable source of PCB contamination in Devil's Swamp Lake (Ref. 15; Ref. 16, p. 3). A 1986 LDEQ investigation confirmed the previous analytical findings and also indicated that Rollins was the source of PCB contamination in Devil's Swamp Lake, adding that the lake was a reservoir or sink for PCBs and other hazardous substances (Ref. 16, pp. 3 and 4).

In 1985 and 1986, the LDEQ collected sediment samples in the Rollins outfall ditch. Six sediment samples-locations R2, R3, R4, 3, 3A, and 4-were collected from the ditch, between the Rollins facility and Devil's Swamp Lake. LDEQ reported that these samples contained polychlorinated biphenyls (PCBs) (Ref. 16, pp. 1 through 4, Tables 1, 2, and 3). Location of sampling points is shown on the sampling location maps provided with the State July 18, 1986 Memorandum report (Ref. 16, pages 16-005 and 16-006).

In January 1991, Rollins collected sediment samples from the upper part of the ditch during a RCRA facility investigation (RFI) sampling event, and a follow-up sampling event in December 1992. Sediment samples collected from 5 meters (16.5 feet) upstream to 250 meters (825 feet) downstream of the outfalls contained PCBs (Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260) at concentrations as high as 105 parts per million (ppm) (Ref. 10, Table 4.3-3a (Individual Compound Summary); Ref. 12, p. 1, Table 1 (Individual Compound Summary) and Table 2 (Total Compound Summary), Figure 1 (Outfall Channel Sediment Sampling Locations)). According to the Rollins RFI report, constituents detected in the Rollins outfall ditch sediments samples "likely resulted from sediment contact with allowable low levels of constituents in the channel water" (Ref. 10, p. 4.3-8).

In October 1992, sediment samples collected during the Bayou Baton Rouge SI contained HCB and HCBDC characteristic Petro wastes but no PCBs were detected (Ref. 8, Tables 1, 2, 4, 6, and 8, and Figure 2). The Petro Consent Decree may not address contamination in the Northern Reaches of Bayou Baton Rouge.

In summary, the available information indicates that extensive contamination in the northern part of Devil's Swamp is characteristic of hazardous waste constituents (HCB and HCBD) found at the Petro Processors NPL site. However, the ESI indicates that northern Devil's Swamp contains some contaminants that may not be attributed to the Petro site. The extensive contamination in Devil's Swamp Lake and the southern part of Devil's Swamp includes PCBs attributable to the Rollins outfall ditch.

Hazardous Substances Released:

HAZARDOUS SUBSTANCES RELEASED FROM THE ROLLINS OUTFALL DITCH	
Hazardous Substances	**Samples**
Aroclor-1248	FY325, FY326, FY327, FY328, FY330, FY332, FY333, FY340, FY414, FY415, FY425
Aroclor-1254	FY312, FY315, FY317, FY318, FY319, FY321, FY322, FY323, FY325, FY326, FY328, FY329, FY330, FY332, FY333, FY336, FY337, FY338, FY339, FY340, FY401, FY404, FY408, FY409, FY414, FY415, FY425
Aroclor-1260	FY318, FY325, FY326, FY327, FY330, FY331, FY336, FY425

Analyses of sediment samples collected from Devil's Swamp Lake and Devil's Swamp during the ESIs indicate that (1) concentrations of PCBs are significantly above background concentrations, and (2) PCBs in Devil's Swamp Lake sediments are attributable to the Rollins outfall ditch. Contaminated samples contained PCBs at concentrations that exceeded the sample quantitation limit, which is the criterion for establishing an observed release when background concentrations are not detected. An observed release factor value of 550 is assigned for the watershed, because an observed release has been established (Ref. 1, Sec. 4.1.2.1.1).

Observed Release Factor Value: 550

4.1.2.2 Drinking Water Threat-Waste Characteristics

The drinking water threat was not evaluated, because no surface water intakes were identified within the TDL (Ref. 29, p. 1; Ref. 33, p. 1)

4.1.3.2 Human Food-Chain Threat-Waste Characteristics

Evidence of PCB contamination associated with the Rollins outfall ditch is based on chemical analyses of samples FY334 and FY335 from the ditch, and Rollins sediment samples collected from transects defined at 5 meters upstream, and 10, 50, 100, 150, 200, and 250 meters downstream of the outfalls (Ref. 6, Table 1 and Table 2; Ref. 10, pp. 4.3-5 through 4.3-8, Table 4.3-3a; Ref. 12, Table 1 and Figure 1). Rollins has documented disposal of PCBs at its facility, which discharges storm water and treated wastewater into the Rollins outfall ditch (Ref. 9, p. 1 of Part I; Ref. 10, Table 3.5-1).

4.1.3.2.1 Toxicity/Persistence/Bioaccumulation

TOXICITY/PERSISTANCE/BIOACCUMULATION POTENTIAL FACTOR VALUE					
Hazardous Substance	**Toxicity Factor Value**	**Persistance Factor Value**	**Bioaccumulation Potential Factor Value**	**Toxicity/ Persistence/ Bioaccumulation Factor Value**	**References**
PCBs	10,000	1	50,000	500,000,000 (5×10^8)	Ref. 1, Sec. 4.1.3.2.1, Table 4-12, Table 4-16; Ref. 2, p. BI-10

Notes:

The surface water category that includes lakes was used to assign the hazardous substance persistence factor value (Ref. 1, Sec. 4.1.2.2.1.2; Ref. 2, p. BI-10).

Bioaccumulation factor values were assigned from the Superfund Chemical Data Matrix (Ref. 2, p. BI-10), for the surface water body type "Fresh Water," in which the fisheries are located (Ref. 1, Sec. 4.1.3.2.1.3).

PCBs are assigned a toxicity/persistence factor value from Table 4-12 (Ref. 1), based on the values assigned for toxicity and persistence (Ref. 2). For PCBs the assigned Toxicity/Persistence Factor Value is 10,000.

Then each substance is assigned a toxicity/persistence/bioaccumulation factor value from Table 4-16 (Ref. 1), based on the values assigned for the toxicity/persistence and bioaccumulation potential factors. The toxicity/persistence/bioaccumulation factor value for the watershed is 500,000,000 = 5×10^8.

Toxicity/Persistence/Bioaccumulation Factor Value: 5×10^8

4.1.3.2.2 Hazardous Waste Quantity

HAZARDOUS WASTE QUANTITY		
Source Number	**Source Hazardous Waste Quantity Value**	**Are Source Hazardous Constituent Quantity Data Complete? (Yes/No)**
1	>0	No

Sum of values = >0

A source hazardous waste quantity value could not be determined. Therefore, a default hazardous waste quantity factor value of 100 was assigned, because human food-chain and environmental threat targets are subject to Level II concentrations (Ref. 1, Sec. 2.4.2.2).

Hazardous Waste Quantity Factor Value = **100**

4.1.3.2.3 Calculation of Human Food-Chain Threat Waste Characteristics Factor Category Value

A waste characteristics factor category value is assigned, based on the waste characteristic product. The waste characteristic product is the product of the toxicity/persistence factor value (10,000), the hazardous waste quantity factor value (100), and the bioaccumulation potential factor value (50,000).

The waste characteristic product value is:

$(10{,}000 \times 100) \times 50{,}000 = 50{,}000{,}000{,}000 = 5 \times 10^{10}$

According to Table 2-7 of the HRS (Ref. 1), a waste characteristic product value of 5×10^{10} receives a waste characteristic factor category value of 320.

Hazardous Waste Quantity Factor Value: 100
Waste Characteristics Factor Category Value: 320

4.1.3.3 Human Food-Chain Threat Targets

Devil's Swamp Lake, Devil's Swamp, and Bayou Baton Rouge are used for recreational and commercial fishing (Ref. 10, p. 5.2-3, Sec. 5.2.3.a, 5.2.3.b and 5.2.3.c; Ref. 20, pp. 1 and 2; Ref. 21, p. 1; Ref. 23, p. 1; Ref. 25, p. 1; Ref. 27, p. 2; Ref. 61, p. 1).

Actual Human Food-Chain Contamination

OBSERVED RELEASE SEDIMENT SAMPLES			
Sample	**Distance from PPE (feet)[a]**	**Hazardous Substance**	**Bioaccumulation Potential Factor Value**
FY312 (DSL-SS-02)	3,515	PCBs	50,000
FY315 (DSL-SS-05)	3,130	PCBs	50,000
FY317 (DSL-SS-07)	3,045 DSL-SS-08 duplicate of sample DSL-SS-07	PCBs	50,000
FY318 (DSL-SS-08)		PCBs	50,000
FY319 (DSL-SS-09)	2,695	PCBs	50,000
FY321 (DSL-SS-11)	1,805	PCBs	50,000
FY322 (DSL-SS-12)	1,090	PCBs	50,000
FY323 (DSL-SS-13)	970	PCBs	50,000
FY325 (DSL-SS-15)	715 DSL-SS-16 duplicate of sample DSL-SS-15	PCBs	50,000
FY326 (DSL-SS-16)		PCBs	50,000
FY327 (DSL-SS-17)	1,040	PCBs	50,000
FY328 (DSL-SS-18)	385	PCBs	50,000
FY329 (DSL-SS-19)	1,135	PCBs	50,000
FY330 (DSL-SS-20)	140	PCBs	50,000
FY331 (DSL-33-21)	155	PCBs	50,000

OBSERVED RELEASE SEDIMENT SAMPLES			
Sample	**Distance from PPE (feet)[a]**	**Hazardous Substance**	**Bioaccumulation Potential Factor Value**
FY332 (DSL-SS-22)	380	PCBs	50,000
FY333 (DSL-SS-23)	465	PCBs	50,000
FY336 (DSL-SS-26)	0	PCBs	50,000
FY337 (DSL-SS-27)	235 DSL-SS-28 duplicate sample of DSL-SS-27	PCBs	50,000
FY338 (DSL-SS-28)		PCBs	50,000
FY339 (DSL-SS-29)	100	PCBs	50,000
FY340 (DSL-SS-30)	285	PCBs	50,000
FY401 (DS-SS-01)	11,015	PCBs	50,000
FY404 (DS-SS-04)	8,440	PCBs	50,000
FY408 (DS-SS-08)	4,735	PCBs	50,000
FY409 (DS-SS-09)	6,320	PCBs	50,000
FY414 (DS-SS-14)	4,435	PCBs	50,000
FY415 (DS-SS-15)	3,880	PCBs	50,000
FY425 (DS-SS-25)	690	PCBS	50,000

Notes:
PPE = Probable point of entry
PCBs = Polychlorinated biphenyls, which may include one or more of Aroclor-1248, Aroclor-1254, and Aroclor-1260.
[a] Measurement of the sample distance from the PPE is explained in Attachment D to this documentation record, Figure D-2, Figure D-3, and Table D-1 (Ref. 3).

Most Distant Level I Sample

Tissue samples from an essentially sessile, benthic, human food chain organism from the watershed under evaluation were not collected during the 1993 ESIs of Devil's Swamp Lake and Devil's Swamp. Therefore, sample data are not available to substantiate Level I concentrations.

Most Distant Level II Sample

Sample ID: FY401 (DS-SS-01)

Distance from the probable point of entry: 11,015 feet = 2.09 miles downstream.

References: Ref. 7, p. 43, Section 4.2.4, pp. 44, 45 and 46, Table 12, p. 11, Figure 2; Attachment D to this documentation record, Figure D-3 and Table D-1.

(Please note 1 mile = 5280 feet).

Level II Fisheries

LEVEL II FISHERIES	
Identity of Fishery	**Extent of the Level II Fishery (In Relation to the PPE)**
Devil's Swamp Lake Devil's Swamp Bayou Baton Rouge	This fishery includes Devil's Swamp Lake, Devil's Swamp and Bayou Baton Rouge. Level II concentrations are present from the PPE to Devil's Swamp Lake ESI sediment sample FY401 (DS-SS-01), a distance of 2.09 miles downstream of the PPE

Notes:

Attachment D to this documentation record (Table D-1 and Figures D-2 and D-3) contains descriptions of sample locations in terms of distance from the PPE.

PPE = Probable point of entry

4.1.3.3.1 Food-Chain Individual

Devil's Swamp Lake, Devil's Swamp and Bayou Baton Rouge are used for recreational and commercial fishing (Ref. 10, p. 5.2-3, Sections 5.2.3.a and 5.2.3.b; Ref. 20, pp. 1 and 2; Ref. 21, p. 1; Ref. 23, p. 1; Ref. 25, p. 1; Ref. 27, p. 2; Ref. 61, p. 1).

Observed PCB contamination of sediments has been documented (Ref. 6, pp. 14 and 38, pp. 15 through 32, Table 2 (Organic Contaminants in Sediments), and p. 13, Figure 2 (Sample Location Map); Ref. 7, pp. 23 and 43, pp. 25 through 30, Table 6 (organic Contaminants Detected in Sediments of North-Central Devil's Swamp), pp. 35 through 40, Table 10 (Organic Contaminants Detected in Sediments of Southern Devil's Swamp), and pp. 44 through 46, Table 12 (Organic Contaminants Detected in Sediments of Southern Bayou Baton Rouge), and p. 11, Figure 2 (Sample Location Map).

PCBs have a bioaccumulation potential factor value of 50,000 (Ref. 2, p. BI-10). PCBs are present in sediment samples from the watershed at a level that meets the criteria for an observed release to the watershed from the site, and a portion of the fishery is within the boundaries of the observed release. Therefore, a fishery (or portion of a fishery) within the target distance limit is subject to actual human food chain contamination (Ref. 1, Sec. 4.1.3.3).

A value of 45 is assigned to the food chain individual, because the fishery is subject to Level II concentrations (Ref. 1, Sec. 4.1.3.3.1).

Food Chain Individual Factor Value: 45

4.1.3.3.2 Population

4.1.3.3.2.1 Level I Concentrations

Tissue samples from a human food chain organism from the watershed under evaluation were not collected during the 1993 ESIs of Devil's Swamp Lake and Devil's Swamp. Therefore, sample data are not available to substantiate Level I concentrations. However, in 1986, LDEQ collected fish tissue samples from Devil's Swamp Lake. Analysis of these samples indicated the bioaccumulation of PCBs and other hazardous substances in fish tissue(Ref. 17, pp. 1, 2 and 3; Ref. 18, pp. 1, 2 and 3).

Level I Concentrations Factor Value: 0

4.1.3.3.2.2 Level II Concentrations

LEVEL II CONTAMINATED FISHERIES			
Identity of Fishery	**Annual Production (pounds)**	**Reference**	**Human Food-Chain Population**
Devil's Swamp Lake Devil's Swamp Bayou Baton Rouge	>0	Ref. 1, Table 4-18; Ref. 25, p. 1; Ref. 61, p. 1	0.03

Devil's Swamp Lake, Devil's Swamp, and Bayou Baton Rouge are fisheries. EPA has documented that up to 500 pounds of crawfish per day are harvested from these areas (Ref. 10, p. 5.2-3; Ref. 25, p. 1; Ref. 27, pp. 1 and 2; Ref. 61, p. 1).

Sediment samples collected from Devil's Swamp Lake, Devil's Swamp, and Bayou Baton Rouge indicate the presence of PCBs at concentrations that qualify as Level II contamination (Ref. 6, pp. 14 and 38, pp. 15 through 32, Table 2 (Organic Contaminants in Sediments of Devil's Swamp Lake), and p. 13, Figure 2 (Sample Location Map); Ref. 7, pp. 23 and 43, pp. 25 through 30, Table 6 (Organic Contaminants Detected in Sediments of North-Central Devil's Swamp), pp. 35 through 40, Table 10 (Organic Contaminants Detected in Sediments of Southern Devil's Swamp), and pp. 44, 45 and 46, Table 12 (Organic Contaminants Detected in Sediments of Southern Bayou Baton Rouge), and p. 11, Figure 2 (Sample Location Map)).

A Level II human food-chain population factor of 0.03 was assigned, based on a conservative estimate of greater than zero pounds annual production (Ref. 1, Table 4-18)

Level II Concentrations Factor Value: 0.03

4.1.3.3.2.3 Potential Human Food-Chain Contamination

Additionally, fisheries downstream of the known extent of contamination, in Devil's Swamp and the Mississippi River, are subject to potential contamination (Ref. 10, p. 5.2-3). However, potential human food-chain contamination was not evaluated, because including these potential targets would not significantly increase the human food-chain threat score. Including the potential targets would not change the overall site score.

Potential Human Food-Chain Contamination Factor Value: 0

4.1.3.3.2.4 Calculation of Population Factor Value

The population factor value is calculated by summing the human food-chain factor values for Level I concentrations (0), Level II concentrations (0.03), and potential contamination (0). The resulting value is assigned as the population factor value for the watershed (Ref. 1, Sec. 4.1.3.3.2.4).

Population Factor Value:

0 + 0.03 + 0 = 0.03

4.1.3.3.3 Calculation of Human Food Chain Threat-Targets Factor Category Value

The human food chain threat target factor category value is calculated by summing the factor values for food chain individual (45) and population factor value (0.03). The resulting value is assigned as the human food chain threat - targets factor category value (Ref. 1, Sec. 4.1.3.3.3).

Human Food-Chain Threat-Targets Factor Category Score:

45 + 0.03 = 45.03

4.1.3.4 Calculation of Human Food-Chain Threat Score for a Watershed

The human food-chain threat score is calculated by dividing the product of the human food-chain threat factor category values for likelihood of release (550), waste characteristics (320), and targets (45.03) by 82,500. The resulting value is assigned as the human food-chain threat score for the watershed (Ref. 1, Sec. 4.1.3.4).

Human Food-Chain Threat Score:

(550 x 320 x 45.03) / 82,500 = 96.064

Human Food-Chain Threat-Targets Factor Category Value: 45.03
Human Food-Chain Threat Score: 96.064

4.1.4.2 Environmental Threat-Waste Characteristics

4.1.4.2.1 Ecosystem Toxicity/Persistence/Bioaccumulation

ECOSYSTEM TOXICITY/PERSISTENCE FACTOR VALUE				
Hazardous Substance	**Ecosystem Toxicity Factor Value**	**Persistence Factor Value**	**Ecosystem Toxicity/Persistence Factor Value**	**Reference**
PCBs	10,000	1	10,000	Ref. 1, Sec. 4.1.4.2.1, Table 4-20; Ref. 2, p. BI-10

Note:

The surface water category that includes lakes was used to assign the hazardous substance persistence factor value (Ref. 1, Sec. 4.1.2.2.1.2; Ref. 2, p. BI-10).

ECOSYSTEM TOXICITY/PERSISTENCE/BIOACCUMULATION POTENTIAL FACTOR VALUE				
Hazardous Substance	**Ecosystem Toxicity/Persistence Factor Value**	**Bioaccumulation Potential Factor Value**	**Ecosystem Toxicity/ Persistence/ Bioaccumulation Factor Value**	**Reference**
PCBs	10,000	50,000	500,000,000 (5×10^8)	Ref. 1, Sec. 4.1.4.2.1.4; Ref. 2, p. BI-10

Note:

Bioaccumulation factor values were assigned from the Superfund Chemical Data Matrix (Ref. 2, p. BI-10), for the surface water body type "Fresh Water," in which the fisheries are located (Ref. 1, Sec. 4.1.3.2.1.3).

Ecosystem toxicity, persistence, and bioaccumulation potential factor values are assigned from SCDM (Ref. 2, p. BI-10). Ecosystem toxicity/persistence factor values are assigned from Table 4-20 (Ref. 1). An ecosystem toxicity/persistence/bioaccumulation potential factor value is assigned from Table 4-21 (Ref. 1). PCBs have a toxicity/persistence/bioaccumulation potential factor value of 500,000,000 = 5×10^8.

Ecosystem Toxicity/Persistence/Bioaccumulation Factor Value: 5×10^8

4.1.4.2.2. Hazardous Waste Quantity

HAZARDOUS WASTE QUANTITY		
Source Number	**Source Hazardous Waste Quantity Value**	**Are Source Hazardous Constituent Quantity Data Complete?**
1	>0	No

A source hazardous waste quantity value could not be determined. Therefore, a default hazardous waste quantity factor value of 100 was selected, because human food-chain and environmental threat targets are subject to Level II concentrations (Ref. 1, Sec. 2.4.2.2).

Hazardous Waste Quantity Factor Value = **100**

4.1.4.2.3. Waste Characteristics Factor Category Value

A waste characteristic factor category value is assigned based on the waste characteristic product. First, multiply the ecosystem toxicity/persistence factor value (10,000) and the hazardous waste quantity factor value (100), subject to a maximum product of 1×10^8.

$$10{,}000 \times 100 = 1{,}000{,}000 = 1 \times 10^6$$

Then multiply this product by the ecosystem bioaccumulation potential factor value (50,000), subject to a maximum product of 1×10^{12}.

$$(1 \times 10^6) \times (5 \times 10^4) = 50{,}000{,}000{,}000 = 5 \times 10^{10}$$

According to Table 2-7 of the HRS (Ref. 1, Sec. 2.4.3.1), a waste characteristic product value of 5×10^{10} is assigned a waste characteristic factor category value of 320.

Hazardous Waste Quantity Factor Value: 100
Waste Characteristics Factor Category Value: 320

4.1.4.3 Environmental Threat-Targets

Most Distant Level I Sample

No level I contaminant concentrations have been detected in samples collected from the surface water pathway during the 1993 ESIs of Devil's Swamp Lake and Devil's Swamp.

Most Distant Level II Sample

Sample ID: FY401 (DS-SS-01)

Distance from the probable point of entry: 11,015 feet = 2.09 miles downstream

Reference: Ref. 7, p. 43, pp. 44, 45 and 46, Table 12 (Organic Contaminants Detected in Sediments of Southern Bayou Baton Rouge), and p. 11, Figure 2 (Sample Location Map); Attachment D, Figure D-3 and Table D-1 of this documentation record.

Sample FY401 (DS-SS-01), collected during the October 1992 sampling event for the 1993 ESI of Devil's Swamp, was located in Devil's Swamp Lake. The sample location is 2.09 miles downstream of the PPE.

4.1.4.3.1 Sensitive Environments

Extensive wetlands are located along the hazardous substance migration pathway from the PPE to sediment sample FY401 (DS-SS-01), 2.09 miles downstream of the PPE (Ref. 5; Attachment D to this documentation record, Figure D-3 and Table D-1). Non wetland sensitive environments were not identified within the target distance limit.

4.1.4.3.1.1 Level I Concentrations

No Level I contaminant concentrations have been detected in samples collected from the surface water pathway during the 1993 ESIs of Devil's Swamp Lake and Devil's Swamp.

Level I Concentrations Factor Value: 0

4.1.4.3.1.2 Level II Concentrations

Wetlands

Wetlands subject to Level II and potential contamination have been identified along the hazardous substance migration path downstream of the PPE (Ref. 4; Ref. 5).

LEVEL II CONTAMINATED WETLANDS		
Wetland	**Wetland Frontage (miles)**	Reference
Devil's Swamp	2.09	Ref. 4; Ref. 5; Attachments D and E to this documentation record.

Devil's Swamp Lake and southern Bayou Baton Rouge are surrounded by wetlands, and Devil's Swamp is a wetland (Ref. 5). These sensitive environments meet the definition of wetlands in 40 CFR Part 230.3(t)(Ref. 64, pp. A-22 through A-23). As shown in Attachment D (Figure D-3 and Table D-1), the distance from the PPE to the most distant level II sediment sample (FY401/DS-SS-01) was determined to be 2.09 miles.

A conservative estimate of wetlands frontage along the hazardous substance migration path is 2.09 miles. This estimate of the wetlands frontage is conservative because it was based on a single flow path. An aerial photograph of Devil's Swamp shows that there are many potential flow paths for contaminant migration that were not evaluated (Ref. 22; Attachment D, Figure D-3 of this documentation record). Also, the downstream extent of contamination has not been determined. Therefore, the actual contaminated wetland frontage may be significantly greater than 2.09 miles.

Total Wetland Frontage: 2.09 miles
Wetland Value: 75
(Ref. 1, Table 4-24)

Level II Concentrations Factor Value: 75

4.1.4.3.1.3 Potential Contamination

Potential contamination of environmental threat targets was not evaluated, although potentially contaminated wetlands exist downstream of the known extent of actual contamination to the target distance limit (Ref. 4; Ref. 5). Based on the threat to level II contaminated wetlands alone, this environmental threat score is maximized. Therefore, evaluating the potential contamination of environmental threat targets will not change the environmental threat score.

Potential Contamination Factor Value: 0

4.1.4.3.1.4 Calculation of Environmental Threat-Targets Factor Category Value

The environmental threat target factor category value is the sum of the values for the level I, level II, and potential contamination factors (Ref. 1, Sec. 4.1.4.3.1.4).

Environmental Threat-Target Factor Category Value:
0 + 75 + 0 = 75

4.1.4.4 Calculation of Environmental Threat Score for a Watershed

The environmental threat score is calculated by dividing the product of the environmental threat factor category values for likelihood of release (550), waste characteristics (320), and targets (75) by 82,500. The resulting value, subject to a maximum of 60, is assigned as the environmental threat score for the watershed (Ref. 1, Sec. 4.1.4.4).

Environmental Threat Score:

(550 x 320 x 75) / 82,500 = 160
(Subject to a maximum of 60)

Assigned value: 60

Environmental Threat-Targets Factor Category Value: 75
Environmental Threat Score: 60

4.1.5 Calculation of Overland/Flood Migration Component Score

The overland/flood migration component score is calculated by summing the scores for the drinking water (not scored), human food-chain (96.06), and environmental (60) threats. This sum, subject to a maximum of 100, is assigned as the overland/flood migration component score (Ref. 1, Sec. 4.1.5).

Overland/Flood Migration Component Score:

0 + 96.06 + 60 = 156.06
(Subject to a maximum of 100)

Assigned value: 100

4.2 Ground water to surface water migration component

This migration component was not evaluated.

4.3 Calculation of Surface Water Migration Pathway Score

The overland/flood migration component score is assigned as the surface water migration pathway score, because the groundwater to surface water component was not evaluated (Ref. 1, Sec. 4.3).

Surface Water Migration Pathway Score = 100

Surface Water Migration Pathway Score: 100

Copies of *Attachments A - F* are available at the EPA Headquarters Superfund Docket:

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